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Personal Electronics

FACT FILE

Market Research Division
Fairchild Publications, New York

NOTE: The term "consumer electronics" covers a rapidly expanding, diversified group of products, including computers, electronic calculators, home entertainment and communications systems, and home security products. Because many of the included manufactures are not separately reported in government industry statistics, but are "lost" in broad figures that include manufactures for larger industrial/commercial markets, it has been found necessary to divide this Fact File into two parts. Part I covers the fast emerging components of the consumer electronics market which are not reported as separate industries in government statistics--including personal computers, calculators, and video games. Part II covers products such as home entertainment items for which industry data as covered in the Standard Industrial Classification system primarily represents manufactures for home or personal use.

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CONSUMER ELECTRONICS

Market Trends

The consumer electronics market is one highly dependent on innovation and changing technology in order to create growth. Starting in the latter 1970's, changes have been coming at such an extraordinarily fast pace that manufacturers are having difficulty keeping up. The Electronics Industry Association estimates that retail sales of consumer electronics stood at about $17 billion in 1981. As the recession of 1981-1982 deepened, consumers became less free with their disposable income and industry analysts generally estimate that total retail dollars in 1982 remained about even with the previous year.

The structure of the consumer electronics industry has changed dramatically over the last two decades and these rapid changes are continuing. Presently, color television sets are the primary product, accounting for more than half of total shipments in 1982. As the personal computer boom continues, and consumers become more aware of the utility of computers, industry analysts estimate that within a few years they will account for a major share of spending for consumer electronics.

Competition is extremely keen, with low cost foreign producers now dominating the consumer electronics market world-wide. It is estimated that imports now account for about half of all sales in the U.S., with almost 85% of these imports coming from the Far East. Domestic producers are relying on innovation in features on their products to compete with the lower priced imports.

Rapidly changing technology has generally kept price increases within the consumer electronics industry at a minimum. Consumer prices for television, as an example, actually declined between 1980 and 1982, despite a sharp rise in the overall consumer price index.

Although many of the individual products in the consumer electronics industry have reached the saturation point and are dependent on replacement sales, there are a wide variety of products within the industry which show the possibility for tremendous sustained growth. Examples of these are video cassette recorders which are in only 5% of all households; home computers, 2%-4%; component stereos, 31.2%.

The future of the consumer electronics industry seems bright to almost all industry analysts. The dual-income household has increased dramatically over the last few years and the trend is for this growth to continue well into the future. This, along with the decision of many couples to delay parenthood and/or to have fewer children, has pushed disposable income up dramatically. As the U.S. economy recovers from the recession in 1983, industry insiders believe that they will be one of the major beneficiaries of the expected spending boom.

The U.S. Bureau of Economic Analysis (1983 Industrial Outlook) estimates that between 1983 and 1987, factory shipments of the home entertainment segment of the industry should grow at a 4.9% compound annual rate. The major reason cited by the Bureau for this future growth is the use of new video products, systems and services for home entertainment and information, and the replacement of older TV receivers with new ones of current designs.

Part I

PERSONAL COMPUTERS, ELECTRONIC CALCULATORS & VIDEO GAMES

Market Trends

The big surge in personal computer sales which started in 1982 will continue to snowball through 1983 and into the foreseeable future. Industry analysts cite two major reasons for the increased sales: the rising number of outlets carrying the machines (including traditional retailers such as department stores, discount stores, toy stores, etc.) and the greater availability of software which is expanding the usefulness of the computer. Many observers have likened the personal computer sales boom to that of television sets in the late 1940's and early 1950's, when sales shot up as more programming was initiated.

Currently, businesses account for roughly 80% of personal computer sales. But with 84 million households in the U.S., only 4% of which already own computers, the potential for this segment is apparent. A January 1983 survey by one computer manufacturer revealed that while 83% of those surveyed were interested in computers, 85% had no plans to buy one, primarily because they did not know how to use it. Exposure to computers in work or school will help overcome this sales obstacle. In fact, 10 home computers are sold for every one found in a classroom, according to a leading manufacturer.

Low-priced, under-$100 computers, dubbed "computer literacy machines" by the industry, will also help introduce the computer age into the household. These machines are easy to use and serve to whet the appetite of the typical user for a more expensive computer with a greater range of functions.

To ensure that computers will become a home staple item rather than a short-lived novelty, a compelling reason for its use must emerge. In 1983, more than half of home computer owners used their machines for game-playing. The videotex concept, currently in the test stages, may provide the answer. This system allows the user to do a plethora of chores, such as home banking and shopping and information retrieval, in a minimum amount of time. It may also allow white-collar employees the opportunity to work at home while still being connected with the office. Market researchers Frost & Sullivan project that as much as 25% of the 1990 white-collar workforce will work from a home terminal.

The continued sales strength of the home computer market may have a negative effect on the market for home video games. In the first quarter of 1983, sales of video game consoles and cartridges were reported to be sluggish. Manufacturers in this $3 billion (in 1982) industry are fighting back by offering consumers improved graphics, voice recognition and synthesis and 3-D effects on their latest models. Many are also delving into the home computer area themselves, by producing equipment which will turn an existing video game console into a home computer or selling entirely new units. Because of the competition from computers, estimated unit sales of game consoles were expected to drop to 5 million units in 1983 from 7.7 million units in 1982. Game cartridges will show an increasing reliance upon licensed movie, TV and arcade game characters, considered a "presold" market, for future sales growth.

PERSONAL COMPUTERS, ELECTRONIC CALCULATORS & VIDEO GAMES

Market Trends (continued)

Because of the relative newness of the personal computer and video game industries, there are no separate industry statistics available from the Bureau of the Census on the personal computer or video game industries. These emerging industries are included in broad existing Standard Industrial Classification (SIC) codes. The information generated on these SIC codes, therefore, are more a reflection of the older industries and do not represent an accurate picture of the personal computer or video game manufactures. With the exception of information on electronic calculators, most of the material in the manufacturing section of this part of the Fact File comes from other than government sources.

PERSONAL COMPUTERS

SHIPMENTS

Consoles

Future Computing, a Dallas firm which specializes in personal computer research, produces yearly estimates of total U.S. shipments of personal and home computers based on surveys of computer vendors and retailers. Their 1983 projections and prior year estimates indicate the tremendous growth in shipments of these machines over the past few years.

Forecasted 1983 personal computer shipments are, at 4.45 million units, double the estimated 1982 figure and more than a five-fold increase over 1980. Projected home computer shipments in 1983 will rise 132% above the 1982 level, according to Future Computing. In 1983, home computer shipments will account for 68.5% of shipments of personal computers retailing for $3,000 or less.

Estimated Shipments of Personal & Home Computers By Retail Price Points, 1980-1982 & Projections for 1983 (Thousands of Units)

	1983 (pro.)	1982	1981	1980	% Change 1983/1982
Under $1,000 at retail					
Personal computers	3,500	1,500	235	85	+ 133.3%
Home computers	2,905	1,200	165	55	+ 142.1
$1,000 - $3,000 at retail					
Personal computers	950	700	440	250	+ 35.7
Home computers	143	112	79	58	+ 27.7

(pro.) = projected.

Source: Future Computing, Dallas, Texas, December 1982

SHIPMENTS

Peripherals

U.S. shipments of peripherals in 1983 are projected by Future Computing to be worth $985 million, a 103.9% jump over the $483 million 1982 shipment value. In units, over 9.5 million peripherals are expected to be shipped in 1983 by U.S. producers, almost one and a half times the 1982 shipment quantity. Joysticks will account for over half of this total quantity but only 6% of the total shipment value. Better than a quarter (27.3%) of the 1983 shipment value will come from shipments of floppy disks.

Estimated Quantity & Value of Home Computer Peripheral Shipments, 1981, 1982 & Projections for 1983

	Quantity (Thous. Units)			Value (Mil. $)		
	1983 (pro.)	1982	1981	1983 (pro.)	1982	1981
Peripheral shipments, total	9,567	3,869	633	$ 985	$ 483	$ 145
Joysticks	5,197	1,994	273	59	27	5
Cassettes	2,585	1,080	148	134	60	9
Floppy disks	571	290	100	269	152	61
Matrix printers	538	223	44	228	111	32
Monitors	338	155	41	120	58	15
Modems	226	89	19	57	24	6
Letter quality printers	103	34	6	108	47	14
Plotters	9	4	2	10	4	3

(pro.) = projected.

Source: Future Computing,
Dallas, Texas
December 1982

Software

Future Computing projections of the 1983 shipment value of software for home computers show a 140% gain over the 1982 shipment value to $683 million and a 169% increase in the number of units shipped by U.S. manufacturers. In 1983, entertainment software will represent 62% of total unit shipments but a lesser 49% of the shipment value. Education software is projected to display the largest growth rate between 1982 and 1983 -- close to a 200% rise in both the quantity and value of shipments.

SHIPMENTS

Software

Estimated Quantity & Value of Home Computer Software Shipments
By Type of Application, 1981, 1982 & Projections for 1983

	Quantity (Thous. Units)			Value of Shipments (Mil. $)		
	1983 (pro.)	1982	1981	1983 (pro.)	1982	1981
Total software shipments	17,761	6,592	1,639	$ 683	$ 284	$ 77
By Type of Application:*						
System	468	266	87	47	29	11
Productivity	1,315	625	155	109	55	18
Home business	783	336	67	65	28	6
Scientific-engineering	316	154	34	19	9	3
Education	3,814	1,317	247	106	36	7
Entertainment	11,065	3,894	1,049	337	127	32

* Explanation of application headings:

System - Basic software package which is usually purchased at the same time as hardware. Contains the operating language which enables other software programs to work on the computer.
Productivity - Software which helps the user save time in performing tasks. Examples are word processing, spread sheets, data bases and graphics programs.
Home business - Similar to productivity software, but not quite as powerful.
Scientific-engineering - Higher level software. Used for scientific measurement and designing engineering specifications, for example.
Education - Teaches something to the user.
Entertainment - Game playing software, from adventure to strategic games.

(pro.) = projected.

Source: Future Computing
Dallas, Texas,
December 1982

LEADING MANUFACTURERS

The number of firms manufacturing personal computers has risen dramatically in the last few years as the personal computer began to take root in American society. In 1975, there were only 5 U.S. manufacturers. By 1980, their number had increased to about 25, and in 1982, close to 150 manufacturers were producing personal computers. Sales in the under-$1,000 computer market, the price range at which most home computers are sold, are dominated by four firms--Texas Instruments, Timex/Sinclair, Commodore and Atari--according to trade sources. Many industry observers expect a shakeout among manufacturers to streamline the industry in the near future.

Intense competition, marked by a round of severe price cutting in mid 1983, led many industry analysts to question the profitability of home computers at under-$500 price points.

LEADING MANUFACTURERS

Estimated Market Share of the Leading Manufacturers
In the Under-$1,000 Personal Computer Market, 1982

	Estimated 1982 Share
Texas Instruments	35%
Timex/Sinclair	25
Commodore	19
Atari	15

FOREIGN TRADE

Imports

In 1982, the import value of electronic calculators fell 15.4% to $121.2 million compared with $143.3 million in 1981. The quantity imported declined 4.5% to 21.3 million units versus 22.3 million the year before. Imports of home video game hardware and video cartridges (which are not reported separately in the import statistics) were valued at $216 million in 1982, 21.7% higher than a year earlier.

The Department of Commerce does not provide a breakdown of personal computer imports but rather places them in a category with all digital stand-alone computers. Imports of these types of computers exceeded 1 million units in 1982, more than double the 1981 number, and were valued at $341.2 million, a 43.6% increase over 1981.

The Japanese, a significant force in the U.S. consumer electronics industry, have yet to make an impact on the personal computer marketplace. A major push for a share of this industry by the Japanese is anticipated by early 1984. However, industry analysts believe they will have trouble making inroads due to a lack of software support.

Meanwhile, the Japanese have concentrated their efforts in the computer peripheral market. It is estimated that half of the low-speed, dot-matrix printers associated with personal (and especially home) computers sold in the U.S. in 1982 were of Japanese manufacture, up from a mere 6% in 1980.

Imports of Personal Computers, Electronic Calculators,
Video Game Units & Cartridges, 1981, 1982

	Quantity (Thous. Units)			C.I.F. Value* (Mil. $)		
	1982	1981	% Change 1982/1981	1982	1981	% Change 1982/1981
Digital machines with a CPU & input/output capability in a single housing**	1,042.1	475.3	+ 119.2%	$341.2	$237.6	+ 43.6%

(continued)

Imports

Imports of Personal Computers, Electronic Calculators, Video Game Units & Cartridges, 1981, 1982
(continued)

	Quantity (Thous. Units)			C.I.F. Value* (Mil. $)		
	1982	1981	% Change 1982/1981	1982	1981	% Change 1982/1981
Game machines other than coin or disc operated, nes, & parts thereof***	na	na	--	$215.6	$177.2	+ 21.7%
Hand-held (pocket-type) electronic calculators	21,331.8	22,333.1	- 4.5%	121.2	143.3	- 15.4

nes = not elsewhere specified.

* The C.I.F. value (cost, insurance, freight) refers to the value of imports at the first port of entry in the U.S. It is based on the purchase price as well as all freight, insurance and other charges (excluding U.S. import duties) incurred in bringing the merchandise from the country of exportation and generally placing it alongside the carrier at first port of entry in the U.S.

** Includes personal computers as well as small business machines but does not include large mainframe computers.

*** Includes all home video game units as well as video game cartridges.

Source: U.S. Department of Commerce, FT 246, December 1982, 1981.

Exports

Exports of all types of digital stand-alone computers (including personal computers) fell 4.6% in value to $899.9 million even though the number of units exported rose to 216 thousand units, a 43.9% jump over 1981. In 1982, the export value of home video game systems and game cartridges was $134.5 million, up 19.1% over the 1981 value. Hand-held electronic calculators gained 26.1% in export value to $22 million.

Exports of Personal Computers, Electronic Calculators, Video Game Units & Cartridges, 1981, 1982

	Quantity (Thous. Units)			Value* (Mil. $)		
	1982	1981	% Change 1982/1981	1982	1981	% Change 1982/1981
Digital machines with a CPU & input/output capacity in a single housing**	215.6	149.8	+ 43.9%	$899.9	$943.7	- 4.6%
Game machines other than coin or disc operated, nes, & parts thereof***	na	na	--	134.5	112.9	+ 19.1

(continued)

FOREIGN TRADE

Exports

Exports of Personal Computers, Electronic Calculators, Video Game Units & Cartridges, 1981, 1982
(continued)

	Quantity (Thous. Units)			Value* (Mil. $)		
	1982	1981	% Change 1982/1981	1982	1981	% Change 1982/1981
Hand-held (pocket-type) electronic calculators	529.5	470.6	+ 12.5%	$22.2	$17.6	+ 26.1%

nes = not elsewhere specified.
* The export value is based on the transaction price, including inland freight, insurance and other charges incurred in placing the merchandise alongside the carrier at the U.S. port of exportation. As defined, the value excludes the cost of loading the merchandise aboard the carrier and also excludes freight, insurance and other charges incurred beyond the port of exportation.
** Includes personal computers as well as small business machines but does not include large mainframe computers.
*** Includes all home video game units as well as video game cartridges.

Source: U.S. Department of Commerce, FT 446, December 1981, 1982

THE POTENTIAL MARKET

Various trade sources have placed the market penetration level of video games at around 17% of U.S. households and a smaller 2-4% for home computers. By 1990, expectations are that home computers will be in 20-40% of American households.

Currently, households with home computers tend to be headed by a person in the 25-44 year old age bracket, based on recent survey data. Households containing children under the age of 18 also seem more likely to own a home computer and/or a video game than households without children.

In 1981, over 32.5 million households included at least one child under 18. Between 1980 and 1981, households headed by someone 35-44 years old increased by 6% to 15.3 million, while median income in this household type reached $27,044, a 7.7% rise over 1980. (See table, p. 46)

RETAIL SALES

PERSONAL COMPUTERS

Consoles

While estimates on the number of personal computers sold in 1982 vary from source to source, best estimates place sales at around 3 million units worth roughly $4.8 billion. These sales figures are approximately double 1981 sales of 1.4 million units valued at about $2.35 billion. Home computer sales are expected to explode upward in 1983 by all accounts, but considerable differences exist among estimates. They range from a low of 4 million units to a 6 million unit top, with the retail value in the neighborhood of $6-8 billion. One leading researcher in the industry estimates personal computer sales in the table below.

Consoles

Estimated Retail Sales of Personal & Home Computers In the U.S., 1979-1982 & Projections for 1983 (Billions of $)

	Personal Computers				Home Computers			
	1983 (pro.)	1982	1981	1980	1983 (pro.)	1982	1981	1980
Hardware market	$ 8.0	$ 4.8	$ 2.3	$ 1.2	$ 2.0	$ 0.9	$ 0.2	$ 0.1
Software market	1.8	1.0	0.4	0.2	0.6	0.3	0.08	0.04

(pro.) = projected.

Source: Future Computing, Dallas, Texas, December 1982

The personal computer market is actually made up of 4 distinct segments. Sales to major corporations constituted about 25% of dollar sales in 1982, educational institutions represented 10%, small businesses, governments and others accounted for another 45% and the home computer market was responsible for 20% of personal computer sales in dollars. The Eastern Management Group, a New Jersey market research firm, estimates that by 1982 2 million home computers were installed in U.S. households, twice the 1981 number.

Peripherals

In 1982, home computer peripheral equipment sales accounted for 50% of the estimated $1.2 billion home computer market, according to Future Computing. At the present time, peripherals are sold separately from the computer itself. Depending on the equipment desired, expenditures for peripherals can often equal or exceed the price of the basic console. In mid-1983, computer manufacturers were beginning to package their console units with the most popular peripherals, a technique known as "bundling", to promote sales.

Control products (joysticks, trackballs & paddles) are expect to be a big growth area in the coming years. Approximately 1.5 million of these products were sold in 1982, worth an estimated $20 million at retail, compared with only 320,000 units in 1981 at a retail value of about $4 million. Sales estimates for 1983 range between 2 and 3.5 million units sold, worth around $22-38 million.

According to Future Computing, peripherals accounted for 64% of sales in the estimated $860 million home computer hardware segment in 1982. The remaining 36% of sales in the category went for home computer consoles. Projections made by Future Computing in December 1982 indicate that peripherals will grab a larger share of the home computer hardware market and by 1987 will account for 74% of sales compared with 26% for consoles. Letter quality printers are expected to show the biggest growth during this five-year period, from 5% of the 1982 hardware expenditures to 9% of the much larger 1987 market.

Peripherals

Estimated Percent of Sales of Selected Peripherals In the Home Computer Hardware Market, 1982, 1987

	1987 (pro.)	1982
Home computer consoles	36%	26%
Floppy disks	18	18
Matrix printers	13	14
Cassettes	7	7
Monitors	7	7
Letter quality printers	5	9
Modems	3	5
Joysticks	3	5
Other peripherals, including speech input & output, music synthesizers, light pens, etc.	8	9

Source: Future Computing, Dallas, Texas, December 1982

Software

Personal computer software sales reached $1 billion in 1982, including about $280 million spent for home computer software. For 1983, sales of personal computer software are expected to climb to $1.8 billion. Future Computing estimates that home computer software accounted for a quarter of overall 1982 sales in the home computer market. Indicative of its growing importance, Future Computing expects home computer software to capture a 46% share of the total market by 1987.

According to the Eastern Management Group, a New Jersey research firm, the top 4 software applications for home computers are: games, financial planning, education and banking. A January 1983 Gallop Poll of home computer owners found that 51% used it for game playing. Almost half (46%) did business or office homework on it while 42% used it as a learning tool for adults and/or children.

Estimated Retail Sales of Software Products by Application, 1982

	1982	
	Mil. $	% of Total
Home computer software market, total	$ 280	100%
By Type of Software:*		
Entertainment	126	45
Productivity	56	20

(continued)

Software

Estimated Retail Sales of Software Products by Application, 1982
(continued)

	1982	
	Mil. $	% of Total
By Type of Software:* (cont'd.)		
Education	$ 34	12%
System	28	10
Home business	28	10
Scientific-engineering	8	3

* Explanation of application headings:

Entertainment - Game playing software, from adventure to strategic games.
Productivity - Software which helps the user save time in performing tasks. Examples are word processing, spread sheets, data bases and graphics programs
Education - Teaches something to the user.
System - Basic software package, usually pruchased along with console. Contains the operating language which enables other software programs to work on the computer.
Home business - Similar to productivity software, but not quite as powerful.
Scientific-engineering - Higher level software. Used for scientific measurement and designing engineering specifications, for example.

Source: Future Computing,
Dallas, Texas,
December 1982

Videotex & Teletext

Videotex is an interactive (two-way) system which allows the user to conduct transactions, retrieve information, send or receive messages, do computations and, in some cases, accept software for limited time use via the telephone. While the initial uses of videotex are mainly for businesses, the home market represents a lucrative field for this service.

Many of the potential home uses of videotex, such as banking services and shopping, were still in the trial stages in mid-1983. However, an AT&T market study predicted that by 1990, between 7 and 8% of all U.S. households will have access to a videotex system, either through a home computer or TV set with a decoder.

To many industry observers, the programs available with videotex will make the home computer an indispensible household tool rather than a plaything. A two-year study of 700 households equipped with a free videotex system, conducted by management consultants Booz, Allen & Hamilton Inc. and concluded in late 1982, found that about two-thirds of the participants were willing to pay $15 a month for the service. Among the most popular programs were household budgeting, personal calendars, games,

Videotex & Teletext

education, banking, shopping, travel reservations, monitoring or burglar and fire alarms and electronic messages.

Teletext is easier to use than videotex because it is strictly a one-way system. It can be used to impart news and weather information and provide subtitles, as well as captions for the hearing-impaired, on TV screens with the use of a decoder. According to the Videotex Industry Association, teletext will be used in 33 to 50% of U.S. households by 1990.

Portable Computers

Continued breakthroughs in size and weight reduction of computer components have opened up the market for portable computers. The basic technology for these machines include a microprocessor which serves as a CPU (central processing unit), a memory, programmability, display and storage space. As defined by Frost & Sullivan in a 1983 study on the market for portable computers, there are two main types: integrated portable computer systems (introduced in 1981) and pocket/briefcase computers (first sold in 1980).

Integrated portable computer systems, dominated by the Osborne Computer Corporation, is a system which typically weighs under 30 pounds and can be carried complete in a single carrying case. Frost & Sullivan estimates that sales of these systems will soar to about $2 billion in 1987 compared with $3 million in 1982. From 1983 through 1986, the compound annual growth rate of integrated portables will approach 47% in dollar terms and 84% in units. A small-scale survey of Osborne portable computer owners, conducted by Frost & Sullivan, found that the most popular uses for these machines were as word processors and for accounting procedures.

Pocket/briefcase computers (excluding programmable calculators) typically weigh less than 2 pounds and often are sold with a built-in battery pack. Nearly all models have the ability to transfer stored information to a larger computer system. Japanese calculator manufacturers are the major manufacturers in this category so far. Sales of pocket/briefcase computers are expected to rise at a 47% compound annual rate from 1983 to 1986 and reach $978 million in sales by 1987.

Estimated Retail Sales of Portable Computers, 1981, 1982 & Projections for 1987

	Quantity (Thous. Units)			Value (Billion $)		
	1987 (pro.)	1982	1981	1987 (pro.)	1982	1981
Integrated portable systems	3,100	130	8	$ 2.1	$ 0.3	$ 0.1
Pocket/briefcase computers	5,365	425	250	978.0	141.0	63.0

(pro.) = projected.

Source: Frost & Sullivan, Inc.
The Markets and Competitive Environment For Portable Computers, March 1983

RETAIL SALES BY TYPE OF OUTLET

PERSONAL COMPUTERS

Because of the relative newness of the home computer and video game markets, there are no government-released statistics on retail sales by outlet type. Various trade observers have tabbed the number of traditional retail outlets (including Radio Shack) selling computers at between 15,000 and 20,000 in 1982. Additionally, there were approximately 2,000-3,000 computer specialty stores in operation in 1982. While there is some disagreement among industry researchers on the percent of computer sales held by the different outlet types, all seem to agree that specialty stores accounted for close to half of all sales.

Based on an assortment of surveys of the personal computer market conducted by the International Data Corporation, Framingham, Ma., place of purchase does differ according to the intended use of the machine. Personal computer owners who bought a machine for home use are more likely to have done so via mail order (36%) than are those who bought them for small business or professional use (10%). According to IDC, six out of 10 home users purchased a personal computer at a computer specialty store compared with half of the small business and professional users.

Place of Purchase of Personal Computers
By Type of Usage
(Percent of Respondents)

	Home Use	Small Business/ Professional Use
Computer specialty store	50%	60%
Mass merchandiser	4	--
Mail order	36	10
Direct sales from manufacturers	7	12
Wholesale/distributor	4	10
Other	3	10

Note: Totals add to more than 100% due to multiple responses.

Source: International Data Corporation, Framingham, Ma.

Analysts also agree, however, that a decline in sales share of computer specialty stores to around 40% of the market is imminent as the traditional retail outlets get more accustomed to selling computers. In 1983, computer specialty stores have a big edge over their retailing counterparts due to their superior computer knowledge and their eagerness to provide services such as training and education.

The number of computer specialty stores in operation continued to mushroom well into 1983 with no end to their proliferation in sight. For example, ComputerLand, one of the largest computer chains in the country (425 stores in early 1983) has more than doubled in size since 1981. As of mid-1983, the chain's expansion plans call for opening 10-15 new stores per month.

RETAIL SALES BY TYPE OF OUTLET

PERSONAL COMPUTERS

An April 1982 report which analyzed sales in computer specialty stores surveyed by Future Computing, Dallas, Texas broke down sales in a typical store as 74% hardware, 15% software and 11% other merchandise (including service, training, books and supplies). The personal computer system itself accounted for 43% of total store sales in the average unit surveyed.

Sales Mix in Computer Specialty Stores

	% of Total Store Sales
Personal computer systems	43%
Printers	15
Software	15
Add-on disks	9
Other hardware	4
Displays	3
Service	3
Supplies	3
Miscellaneous (including books & training)	5

Source: Future Computing,
Dallas, Texas
April 1982

A first quarter 1983 survey of 1,700 computer specialty stores found that sales in these stores were highest during the last quarter of the year, rising from 9.1% in October to 9.9% in November before reaching the December peak of 14.1% of total yearly sales.

Percent of Total Sales Done Each Month
In Computer Specialty Stores, 1982

	Total	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
% of sales	100.0%	6.3%	6.4%	7.3%	6.8%	7.0%	8.0%	8.2%	8.9%	8.0%	9.1%	9.9%	14.1%

Source: Future Computing,
Dallas, Texas

CONSUMER BUYING HABITS

PERSONAL COMPUTERS

In 1982, 3.2% of a nationally-representative panel of 70,000 U.S. households bought a personal computer compared with only 0.7% of the panel in 1981, according to a recent (January 1983) semi-annual survey undertaken by the TRAC Division of NFO Research's Personal Computer and Video Game Monitor Service program. Of those households which bought a computer in 1981 or 1982, 78% employ it strictly for

personal use, 16% use it for business only and the remainder split its usage between the two. Asked about their buying intentions for the immediate future, 3.2% of the households said they intend to buy a personal computer during the January to June 1983 period.

Fully half of the households which bought a personal computer in 1981 or 1982 are headed by someone from 35 to 49 years of age. Households with incomes under $40,000 contained two-thirds of the personal computers bought in the two years prior to the survey. Households in the south accounted for 30% of personal computer sales.

Demographic Profile of Households
With Personal Computers, 1981, 1982

	Total	Personal Computers Purchased in: 1982	1981
Household Income:			
Under $25,000	33.2%	34.3%	27.5%
$25,000-39,999	33.0	32.7	34.2
$40,000-$49,999	14.4	14.4	15.0
$50,000 & over	19.4	18.6	23.3
Age of Household Head:			
Under 25 years old	4.0	4.1	2.7
25-34 years old	23.4	23.4	23.3
35-49 years old	50.1	49.9	52.2
50-64 years old	18.5	18.9	17.3
65 years old & over	4.0	3.7	4.5
By Region:			
Northeast	24.2	24.4	24.2
North	22.8	22.6	23.7
South	29.6	30.8	25.0
West	23.3	22.2	27.1

Source: TRAC Division,
NFO Research, Toledo, Oh.

The average income of a household with a personal computer purchased in 1981 or 1982 is $34,908, according to the TRAC survey. Households with incomes of $50,000 bought 37.5% of personal computers which cost at least $2,000 and only 13.5% of units priced under $1,000. Nearly 90% of personal computers which cost under $1,000 were bought for personal use only.

Household Income of Personal Computer Purchasers
By Price, 1981-1982

Household Income	Brands Under $1,000	Brands $1,000 - $2,000	Brands $2,000 & over
Under $25,000	38.1%	21.4%	19.4%
$25,000-39,999	34.1	30.8	28.4%
$40,000-49,999	14.3	15.1	14.7
$50,000 & over	13.5	32.7	37.5
Total	100.0	100.0	100.0
Mean Income	$32,056	$41,106	$43,593

Source: TRAC Division,
NFO Research, Toledo, Oh.

The average price paid for a personal computer over the two-year period covered by the survey (1981-1982) was $785. Computer stores were the most popular outlets for personal computer purchases, followed by Radio Shack and catalog/mail order sales.

Place of Purchase of Personal Computers &
Average Price Paid, 1981-1982

	Personal Computers	
	% of Unit Sales	Average Price Paid
Computer stores	18.8%	$ 1,589
Radio Shack	15.5	931
National chains	6.6	544
Sears	2.2	1,221
Penney	1.3	297
Ward	3.2	190
K mart	5.2	230
Toy stores	3.4	246
Catalog/mail order	11.7	300
All other outlets	38.7	726

Source: TRAC Division,
NFO Research, Toledo, Oh.

CONSUMER BUYING HABITS

PERSONAL COMPUTERS

Warwick Advertising in New York City contacted 15,000 nationally-representative multi-person households in October 1982 to uncover information about those who own a personal computer. The 10,816 respondents were almost evenly divided between male and female household heads.

Eight out of 10 computer-owning families surveyed contained an adult member who was involved with computers at their workplace. More than a third of households with personal computers have a child who uses a computer in school.

Households with children under 18 were more likely to own a personal computer than households without children of this age. Including respondents who said they would definitely or probably buy a personal computer in 1983, 11.8% of households with under-18 year old children will own a computer by the end of the year.

Personal Computer Ownership
In Households With & Without Children

	All Households	With Children Under 18 Years: Total	Under 6 Years	6-12 Years	13-17 Years	No Children Under 18
Number of respondents	10,816	4,736	1,675	2,553	2,243	6,080
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Personal Computer Owners						
1983*	8.5	11.8	10.1	12.5	12.6	5.6
1982	3.7	5.1	3.9	4.9	6.0	2.5

*1983 percentages include all 1982 owners plus respondents who said they will "definitely" or "probably" buy a computer in 1983.

Source: Warwick Advertising,
Dimensions of the Electronics/Information/
Communication Revolution, February 1983.

PERSONAL COMPUTER SOFTWARE

Frost & Sullivan, a New York-based market research firm, conducted an examination of the personal computer market, excluding game-type and limited-usage machines (i.e. Times/Sinclair 1000, Commodore VIC-20) in late 1982. The survey respondents were 1,291 subscribers of either Byte or Personal Computing magazines. Of those surveyed, 83% owned their own personal computer. Only 18% of the respondents classified themselves as computer novices; the remaining 82% considered themselves either intermediates or experts in their handling of a personal computer.

At the time of their purchase of a personal computer, respondents bought an average of $1,910 worth of hardware and $608 worth of software. During their first year of ownership, respondents typically spent another $1,027 for hardware items and $439 for software. Eight percent of participants who owned computers did all of their own programming.

PERSONAL COMPUTER SOFTWARE

Amount Spent on Personal Computer Software
Initially & During the First Year of Ownership

	Percent of Respondents	
Amount Spent on Software	Initial Purchase	Other First-Year Purchases
Less than $100	27.6%	27.0%
$100 - 249	23.5	28.2
$250 - 499	16.9	17.3
$500 - 999	16.5	18.4
$1,000 & over	15.5	9.1

Source: Frost & Sullivan, Inc.,
"The Personal Computer Software Market in the United States"
November 1982

Over half (51.6%) of the respondents to the Frost & Sullivan survey bought their software primarily in computer specialty stores, either chains or independents. Another 38.6% purchased software mainly through the mail.

Primary Place of Purchase of Personal Computer Software

	Percent of Respondents
Computer specialty stores	51.6%
Chains	29.8
Independents	21.8
Mail order	38.6
Trade show	1.2
Bookstore	1.2
College/university store	1.2
Department store	1.1
Other, including user groups, manufacturers, consultants, etc.	5.1

Source: Frost & Sullivan, Inc.,
"The Personal Computer Software Market in the United States"
November 1982

Based on the value of the initial software purchase and subsequent purchases throughout the first year of ownership coupled with Frost & Sullivan's estimate of the personal computer installed based (with the exclusions previously noted), word processing software sold in 1982 had a market value estimated at $48.4 million, more than any other software application. Spread sheets had the second highest estimated market value, $29.4 million.

PERSONAL COMPUTER SOFTWARE

Forecasted Market Value of the Leading Software Applications, 1982, 1983

	Market Value At Retail (Million $) 1983	1982	% Change 1983/1982
Word processing	$ 81.5	$ 48.4	+ 68.4%
Spread sheets	49.7	29.4	+ 69.0
Entertainment	46.8	26.0	+ 80.0
Assembler	40.6	24.3	+ 67.1
Data base manager	37.7	22.9	+ 64.6

Source: Frost & Sullivan, Inc., "The Personal Computer Software Market in the United States" November 1982

Since their acquisition of a personal computer, respondents bought an average of $1,266 worth of business software programs.

Types of Software Programs Purchased & Average Total Expenditures

Type of Software Programs	Average Total Expenditures
Business	$ 1,266
Education	168
Entertainment	113
Home	116
Utility	219

Source: Frost & Sullivan, Inc., "The Personal Computer Software Market in the United States" November 1982

In April 1982, 8,000 Time magazine subscribers were asked to participate in a study undertaken for the magazine by Beta Research designed to uncover demographic information about personal computer and video game owners. Over two-thirds of the 3,657 respondents were below the age of 55 with total household incomes of at least $25,000. Almost a fifth (19.4%) own video games and 7.5% own a personal computer. An additional 6.9% of the respondents indicated that they are likely to buy a personal computer within a year.

Of the respondents who have purchased personal computers, 48% use it primarily in their home while another 12.8% split its usage between the home and the office.

CONSUMER BUYING HABITS

PERSONAL COMPUTER SOFTWARE

The median expenditure for personal computers intended primarily for home use was $1,455. Units selling for under $1,000, 70% of which were purchased for the home, cost a median $448.

Among the leading home applications of personal computers are games and hobbies, personal finance and writing and editing. A quarter of the respondents who purchased their computer less than a year prior to the survey have on-line security systems compared with only 9.9% of all personal computer owners.

Home Uses for Personal Computers
& Desired Applications for the Future

	Have Now	Want Next		Have Now	Want Next
Games & hobbies	43.2%	1.5%	On line info systems	9.9%	15.4%
Personal finance, taxes	30.8	13.9	Kitchen management	5.1	5.5
Writing & editing	25.6	12.5	Home security	2.9	7.3
Home management	22.3	13.9	Energy control	2.2	8.1
Records & schedules	20.1	14.3	Recipes	1.8	1.5
Child education	19.0	8.8	Physical fitness program	1.5	4.8
Mailing lists	17.9	7.7	Other uses	1.5	0.8
Adult education	17.6	15.4	No answer	36.6	62.3
Median no. of uses	3.4	3.1			

PERSONAL COMPUTER PERIPHERALS

Creative Computing, a consumer publication focusing on the personal computer field, asked 2,000 subscribers in April 1982 about their use, ownership and purchase of microcomputers and related equipment. The survey, conducted by Beta Research, Syosset, N.Y., yielded 1,327 replies, a 67% response rate. Eighty-four percent of the respondents used a microcomputer at home for personal purposes, and almost half (48%) used one at home for business purposes. About three-quarters (74%) personally own a microcomputer.

Seven out of 10 respondents plan to buy a microcomputer and/or equipment in the 12 months following the survey. A fifth intend to purchase a microcomputer itself, 58% plan a purchase of at least one peripheral item and 43% expect to buy a floppy disk and/or a tape or tape cassette.

PERSONAL COMPUTER PERIPHERALS

Percent of Respondents Who Plan To Buy
Microcomputers and/or Equipment For Their Own Use

	% of Respondents
Any equipment	71%
Microcomputers	20
Peripherals (Net)	58
Printers (Net)	27
Line printer	18
Letter quality printer	10
Video equipment (Net)	17
Videoterminal	5
Video monitor	13
Drives (Net)	34
Floppy disk drive	29
Hard disk drive	5
Tape drive	2
Add-on memory	19
Modem	18
Music/voice synthesizer	7
Additional input/output or analog/digital	6
Graphics tablet	4
Plotter	2

Of those respondents to the Creative Computing survey who already own peripherals, 55% bought them at a computer store and 38% obtained them via mail order.

ELECTRONIC CALCULATORS & VIDEO GAMES

SHIPMENTS

U.S. electronic calculator shipments increased 2.6% in value to $488.9 million in 1981. The shipment value of hand-held electronic calculators (from the basic four-function machine to programmable, display and/or printing types) dropped 11.4% to $189.4 million.

Video game shipments from U.S. manufacturers surpassed the $1 billion level in 1981, soaring 129.4% above the 1980 shipment value of $452.2 million. According to trade sources, an estimated 27 million home video game cartridges were sold to retailers in 1981.

SHIPMENTS

Quantity & Value of Shipments of Electronic Calculators & Video Games by All U.S. Producers, 1980, 1981

	Quantity (Mil. Units)			Value (Mil. $)		
	1981	1980	% Change 1981/1980	1981	1980	% Change 1981/1980
Electronic calculators, total	na	na	--	$ 488.9	$ 476.4	+ 2.6%
Hand-held	10.5	12.9	- 18.6%	189.4	213.8	- 11.4
Desk-top / Peripherals for electronic calculators	2.4	2.4	--	299.5	262.6	+ 14.0
Electronic games, total*	na	na	--	1,037.3	452.2	+129.4

na = not available.

* Includes arcade and amusement center types (except coin-operated), and home electronic games for attachment to TV receivers.

Source: U.S. Bureau of the Census, Current Industrial Reports, MA-36N(81) & MA-35R(81).

About 20 U.S. manufacturers make video game consoles. Atari held the largest market share in 1982, although it was not the overwhelming 70%-80% it had been two years ago.

ELECTRONIC CALCULATORS

APPARENT CONSUMPTION

The apparent consumption value of hand-held electronic calculators dropped 14.6% to $310.9 million in 1981 on a 9.1% decline in apparent consumption units to 32.4 million calculators. Imports accounted for two-thirds of the total quantity available in 1981 and 1980 but its share of apparent consumption value fell to 45% in 1981 from 49% the prior year.

Apparent Consumption of Hand-Held Electronic Calculators, 1980, 1981

	U.S. Shipments		U.S. Exports		Imports		Apparent Consumption	
	1981	1980	1981	1980	1981	1980	1981	1980
Quantity (Thous. Units)								
Hand-held (pocket-type)	10,512.5	12,871.2	470.6	678.2	22,333.1	23,423.9	32,375.0	35,616.9
Value (Mil. $)								
Hand-held (pocket-type)	$ 189.4	$ 213.8	$17.6	$28.9	$139.1*	$179.0*	$310.9	$363.9

*Represents the customs value, which is the selling price of the merchandise excluding U.S. import duties, freight, insurance and other charges incurred in bringing the merchandise to the U.S.

Source: U.S. Department of Commerce, Current Industrial Reports, MA-35R (81)-1; FT 246, 446 & 410

VIDEO & ELECTRONIC GAMES

RETAIL SALES

Video Games

Video game sales are expected to crack the $5 billion mark in 1983, significantly above the 1982 volume of approximately $3 billion. Sales of game cartridges will account for 60% of 1983 dollar sales with about 120 million game units sold, almost double the 65 million units sold in 1982. Eight million consoles were purchased in 1982, up from 4.5 million in 1981. The number of cartridges sold per console jumped to 9 in 1982 compared with an average of 6 two years earlier.

Video games can now be found in an estimated 14 million households, 17% of all U.S. households. An industry analysis by the investment firm of Sanford Bernstein & Co. concluded that the market penetration rate could hit 30% by 1986.

Hand-held Electronic Games

Hand-held electronic game sales reached their peak in 1980. Since that time, unit and dollar sales have fallen approximately 50% per year. This drop-off has been attributed to the emergence of video games. To restore health to this market segment, a palm-sized video game system was introduced in 1983. The system offers color graphics, 3-D effects and multiple skill levels.

CONSUMER BUYING HABITS

VIDEO GAMES

Almost 9% of the nationally-representative, 70,000 member TRAC panel purchased a video game in 1982, up from 5.7% the previous year. During the six-month period ended June 1983, 2.0% intended to buy a video game, according to the January 1983 survey. Households with incomes under $40,000 contained 83.3% of all video games sold. Almost 35% of video game purchases in 1981 and 1982 were to households in the southern U.S.

Demographic Profile of Households
With Video Games, 1981, 1982

		Video Games Purchased in:	
	Total	1982	1981
Household Income:			
Under $25,000	49.0%	53.5%	41.4%
$25,000-39,999	34.3	32.6	37.2
$40,000-49,999	8.9	7.5	11.1
$50,000 & over	7.8	6.4	10.3
Age of Household Head:			
Under 25 years old	5.6	6.1	4.9
25-34 years old	31.2	33.3	27.9
35-49 years old	47.6	44.8	51.8
50-64 years old	13.5	13.6	13.6
65 years old & over	2.1	2.2	1.8

(continued)

Demographic Profile of Households
With Video Games, 1981, 1982
(continued)

	Total	Video Games Purchased in: 1982	1981
By Region:			
Northeast	23.5%	21.9%	26.1%
North	24.9	24.9	24.9
South	34.6	36.7	31.2
West	17.0	16.5	17.8

Source: TRAC Division,
NFO Research, Toledo, Oh.

The average price paid for a video game over the two-year period covered by the TRAC survey (1981-1982) was $149. A fifth of all video game sales were done in chain stores.

Place of Purchase of Personal Computers & Video Games
& Average Price Paid, 1981-1982

	Video Games: % of Unit Sales	Average Price Paid
Computer stores	0.3%	$ 139
Radio Shack	0.7	166
National chains	21.0	150
Sears	11.2	149
Penney	7.7	152
Ward	2.1	145
K mart	11.4	145
Toy stores	7.8	154
Catalog/mail order	7.3	146
All other outlets	51.5	146

Source: TRAC Division,
NFO Research, Toledo, Oh.

Four out of 10 households with children under 18 (including "probable" and "definite" 1983 buyers) in the October 1982 Warwick Advertising survey of 10,816 families will purchase a video game by 1984 compared with only 12.3% of all other households.

VIDEO GAMES

Personal Computer & Video Game Ownership
In Households With & Without Children

	All Households	With Children Under 18 Years: Total	Under 6 Years	6-12 Years	13-17 Years	No Children Under 18
Number of respondents	10,816 100.0%	4,736 100.0%	1,675 100.0%	2,553 100.0%	2,243 100.0%	6,080 100.0%
Video Game Owners 1982	24.6	40.5	31.8	44.0	45.1	12.3

Source: Warwick Advertising, Dimensions of the Electronics/Information/ Communications Revolution, February 1983.

Information on video game hardware and software and electronic games has been supplied by the Toy Market Tracking Service, a division of National Panel Diary (NPD) Special Industry Services. It is based on findings from an on-going monthly panel diary tracking the purchases of 13,000 nationally representative families.

According to this source, electronic handheld/tabletop game sales reached $500 million in 1982. Close to 21.5 million units were sold, with almost a quarter bought from discount stores.

Place of Purchase of Electronic Handheld/Tabletop Games, 1982
(Percent of Units Sold)

	1982
Discount stores	24%
National toy chains	21
Sears/Penney/Wards	13
Catalog showrooms	7
Toy stores, except national chains	5
Department stores	5
Variety stores	4
All other outlets, including mail order	22

The market for video game hardware was approximately $1.2 billion in 1982 on unit sales of 8.6 million machines, according to projections from the Toy Market Service. Almost 66.7 million game cartridges, worth an estimated $1.6 billion at retail, were sold in 1982. Discount stores were the most popular outlet types for both hardware and software.

VIDEO GAMES

Place of Purchase for TV Video Game Hardware & Software, 1982
(Percent of Units Sold)

	1982	
	Hardware	Software
Discount stores	31%	29%
Sears/Penney/Wards	23	18
National toy chains	9	9
Department stores	7	7
Catalog showrooms	6	6
Variety stores	2	2
All other outlets, including mail order	21	29

To uncover information about home video game ownership and usage, Newsweek magazine commissioned Factline, Inc., New York, to survey recent Atari and Mattel game purchasers in November 1982. All of the 579 respondents had bought a video game system within a year prior to the survey. The household income of the participants was a median $30,700. Almost 9 out of 10 respondents (88%) expressed satisfaction with their system. In addition to a video game unit, a quarter of the households also owned a videocassette recorder and 8.3% possessed a home computer.

On average, the video game system was used 8.5 hours a week. A fifth of the households used it more than 12 hours a week while 38% used it no more than 4 hours during an average week. Users averaged 25 years of age but tended to be slightly older (26.4 years) in households with total incomes of $35,000 and over. In these households, a third of the users were over 35 years old compared with 22.7% in $25,000-34,999 income households and only 17.0% in households with incomes under $25,000.

Almost three-quarters of the respondents considered the selection of games either extremely important or very important in the decision of which video game system to buy.

Factors Considered Extremely Important or Very Important In Influencing the Purchase Decision of a Video Game Unit

	% of Respondents
Has a wide selection of its own games	72.6%
Manufactured the video games we most wanted to play	65.6
Graphics/pictures were more real/life-like	62.1
Was the best value for the money	61.9
Had the best reputation for durability	55.6
Experienced manufacturer of video game equipment	52.7
Good sound effects	52.6
On sale at a reduced price	33.8
Looked attractive/good looking design	33.1
Could be used as a small computer	7.4

CONSUMER BUYING HABITS

VIDEO GAMES

Nearly 66% of respondents in the Newsweek survey felt that future video games systems should also be able to act as home computers. An almost equal number thought that future systems should come equipped with a voice synthesizer to imitate a human voice.

ELECTRONIC CALCULATORS

Almost three-quarters (72.2%) of the 981 persons interviewed in a Merchandising magazine poll conducted in shopping areas during January and February 1983 said they own an electronic calculator. Another 8.4% expect to purchase one in 1983. Mini-card, hand-held calculators are the most popular type. Of the 790 respondents who either own a calculator or expect to purchase one, 54.7% will buy, or already have, this type.

Type of Electronic Calculator Owned or Expected to Own, 1983

	Percent of Respondents*
Hand-held calculators	
Mini-card	54.7%
Scientific	19.1
Printer	15.3
Programmable	14.9
Other	0.3
Desk-top	
Printer & display	28.4
Display only	15.6
Printer only	12.9

*Total exceeds 100% due to multiple responses.

Source: Merchandising magazine, May 1983.

PART II

HOME ENTERTAINMENT PRODUCTS & SYSTEMS, COMMUNICATIONS PRODUCTS & HOME SECURITY SYSTEMS

AT THE MANUFACTURER LEVEL

A major component of the consumer electronics market is in the home entertainment area--dominated now by color television sets. Many of these products--unlike those covered in Part I--are separately defined consumer products under the Standard Industrial Classification system, and are covered in Census Bureau and Department of Labor industry reports.

A complete census of all manufacturers in the U.S. is compiled every five years by the U.S. Bureau of the Census--the most recent covering the year 1977. In intra-census years, the Bureau conducts an annual survey of a sample of manufacturers. Reports from these surveys are adjusted for comparability with findings in the complete Census.

The latest annual survey report covers operations in the year 1981.

GENERAL INDUSTRY STATISTICS

Radio & TV Equipment (SIC 365)
(Including all manufacturers classified in SIC 3651 & 3652)

	1981	1980	1979	1977
Number of companies	na	na	na	na
Number of establishments**	na	933	979	1,087
With 20 or more employees	na	323	351	309
Payroll (mil. $)	$1,323.3	$1,293.6	$1,256.3	$1,097.0
Value added by manufacture (mil. $)#	3,728.1	3,772.0	3,501.3	3,078.1
Value of industry shipments (mil. $)##	8,781.9	8,515.6	8,091.8	6,913.2
Capital expenditures, new (mil. $)	226.5	210.1	217.5	135.7

Radio & TV Receiving Sets (SIC 3651*)

	1981	1980	1979	1977
Number of companies	na	na	na	547
Number of establishments**	na	440	464	581
With 20 or more employees	na	208	216	192
Payroll (mil. $)	$1,038.4	$ 996.1	$ 945.7	$ 852.4
Value added by manufacture (mil. $)#	2,608.1	2,075.2	2,559.1	2,351.8
Value of industry shipments (mil. $)##	7,057.8	6,798.8	6,572.7	5,732.6
Capital expenditures, new (mil. $)	187.2	159.3	165.2	105.8

Phonograph Records & Prerecorded Tapes (SIC 3652*)

	1981	1980	1979	1977
Number of companies				
Number of establishments**	na	na	na	679
With 20 or more employees	na	490	515	709
Payroll (mil. $)	na	115	135	133
Value added by manufacture (mil. $)#	$ 285.0	$ 297.5	$ 310.6	$ 244.6
Value of industry shipments (mil. $) ##	1,120.0	1,066.9	942.1	727.3
Capital expenditures, new (mil. $)	1,724.4	1,716.8	1,519.1	1,181.7
	39.3	50.8	52.3	29.8

na = not available
n.e.c. = not elsewhere classified
(e) = estimated

Standard Industrial Classifications (SIC) =

* SIC 3651 covers establishments primarily engaged in manufacturing electronic equipment for home entertainment, including auto radios and tape players. This industry includes establishments primarily engaged in manufacturing public address systems and music distribution apparatus. Establishments primarily engaged in manufacturing phonograph records and prerecorded tapes are classified in industry 3652. Establishments primarily engaged in manufacturing separate cabinets for home electronic equipment are classified in Major Group 25.

* SIC 3652 covers establishments primarily engaged in manufacturing phonograph records and recorded magnetic tape. Establishments primarily engaged in manufacturing electronic equipment for home entertainment, except records and prerecorded magnetic tape, are classified in Industry 3651.

** Each business location is counted as a separate establishment. Figures for 1979 and 1980 are from County Business Patterns. (U.S. Census Bureau)

\# Value added by manufacturer is derived by subtracting the cost of products bought for resales without further manufacture, the cost of piece goods and other materials, contract work, etc., from the value of shipments, with adjustments for finished products inventories. It avoids the duplication in value of production which results from the use of products of some manufacturing establishments as materials by others and is for most purposes the best value measure of individual industries.

\## The value of industry shipments includes both primary and secondary products made by manufacturers in the industry, as well as receipts for contract work and miscellaneous receipts. The value of primary products made in the industry, as well as the value of these products made by secondary producers is reported in the tables on product shipments.

Source: U.S. Bureau of the Census
Census of Manufactures, 1977
Annual Survey of Manufactures, 1979, 1980, 1981

Employment & Earnings

Average employment in the radio & TV receiving set industry fell dramatically during 1982, declining 11.8% to 94,600 workers during that period. Production worker employment during this same period showed an even greater decline falling over 15% from the 1981 mark to a total of 64,800 in 1982.

Despite the large decline in the work force in the industry in 1982, the number of hours worked weekly by production workers also showed a decline between 1981 and 1982 falling to an average of 38.6 in 1982 from 39.1 in 1981.

Employment & Earnings in the U.S. Radio/TV Industry

	Annual Averages			% Change
	1982	1981	1980	1982/1981
Radio & TV receiving equipment (SIC 365)				
All employees (thous.)	94.6	107.2	108.8	- 11.8%
Production workers (thous.)	64.8	76.3	78.6	- 15.1
Average weekly earnings	$ 297.20	$ 278.78	$ 249.10	+ 6.7
Average weekly hours	38.9	39.1	38.8	- 0.5
Average overtime hours	1.2	1.5	1.6	- 20.0
Radio & TV receiving sets (SIC 3651)				
All employees (thous.)	73.5	82.2	84.2	- 10.6
Production workers (thous.)	49.4	56.7	58.9	- 12.9
Average weekly earnings	$ 302.62	$ 286.30	$ 255.92	+ 5.7
Average weekly hours	38.6	38.9	38.6	- 0.8
Average overtime hours	1.1	1.5	1.6	- 26.7

Source: U.S. Bureau of Labor Statistics, Employment & Earnings

Industry Concentration

The home entertainment segment of the consumer electronics industry is characterized by a large number of small operations. Census Bureau data for 1980 showed a total of 933 manufacturing establishments in the industry (defined by SIC 365), of which 610 (65%) had fewer than 20 employees.

Industry Concentration

Number of Manufacturing Establishments by Employment Size, 1980

	Radio & TV receiving equipment (SIC 365**)		Radio & TV receiving sets (SIC 3651**)		Phonograph records (SIC 3652**)	
	Number	% of total	Number	% of total	Number	% of total
Total establishments*	933	100.0%	440	100.0%	490	100.0%
Employment size:						
Under 20 employees	610	65.4	232	52.7	375	76.5
20 to 49 employees	141	15.1	78	17.7	63	12.9
50 to 99 employees	60	6.4	38	8.6	22	4.5
100 to 249 employees	56	6.0	42	9.6	14	2.9
250 to 499 employees	35	3.8	25	5.7	10	2.0
500 or more employees	31	3.3	25	5.7	6	1.2

* = Includes only establishments with payrolls.
** = for definition of SIC codes see page 29.

Source: U.S. Bureau of the Census, County Business Patterns, 1980

On a regional basis, the home entertainment segment of the consumer electronics industry is highly concentrated in a few States. According to the U.S. Bureau of Industrial Economics (1983 U.S. Industrial Outlook), the major producing States accounting for the largest percent of shipments in the radio/TV receiving sets industry are Alaska, California, Georgia, Illinois, Indiana, Kentucky, Texas and Virginia.

When the 1977 Census of Manufactures was compiled, Illinois accounted for the largest share (28%) of the radio/TV receiving sets industry, while having less than 10% of the manufacturing establishments. California led in value of shipments of phonograph records and prerecorded tapes, controlling 27.4% of industry shipments, with about 42% of the total establishments in the U.S. industry.

Operating Ratios

Key business ratios by industry classification are compiled by the Business Economics Division of Dun & Bradstreet. Ratios for 1980 in the home entertainment segment of consumer electronics were reported as follows.

GENERAL INDUSTRY STATISTICS

Operating Ratios

Median Business Ratios, 1980 (Selected)

	Radio & TV Sets (SIC 3651)	Phono Records, Tape (SIC 3652)
Number of companies	113	82
Current assets to current debt (times)	2.25	1.86
Net profits on net sales (%)	4.59	7.53
Profits on net worth (%)	23.57	22.28
Sales to net worth (times)	5.28	3.85
Sales to inventory (times)	6.0	12.6

Source: Dun & Bradstreet, 1980 Key Business Ratios.

SHIPMENTS

The structure and product orientation of the home entertainment segment of consumer electronics has changed a great deal in the past two decades. Color television receivers have become the principal product, currently accounting for about 58% of the industry's shipments. U.S. plants with Far East ownership now supply an estimated 35% of U.S. industry color TV receivers.

The production of radios and audio tape recorders has shifted in large part to Japan and elsewhere in the Far East and significant production no longer exists in the U.S. New products, however, such as video disc players and systems, are being produced by U.S. manufacturers.

The value of U.S. factory shipments of radios and TV receiving sets and related products registered a real compound annual rate of growth of 5.0% in the period 1972-1981. Due to the recession, high interest rates and an increase in imports (particularly video cassette recorders and television receivers), shipments in 1982 (valued at a constant 1972 dollar) declined 8.6% from the 1981 level.

According to the U.S. Bureau of Industrial Economics (1982 U.S. Industrial Outlook), factory shipments in the radio/TV receiving set industry are expected to rise 3.3% in 1983 in terms of a constant 1972 dollar. The sale of color television receivers is expected to provide the impetus for this growth. A major domestic market for new receivers is resulting from the replacement of older sets with those incorporating modern technology and features such as solid state circuitry, electronic tuning, remote control and comb filters to improve picture resolution.

In addition, the increased variety of video program sources--cable, pay cable, subscription TV, multiple distribution services, video discs and video cassettes--and the alternative uses of the TV receiver for home computer and video game displays provide incentives for the ownership of more than one TV receiver per home.

SHIPMENTS

Factory shipments of automobile radios are expected to show a good increase in 1983 as automobile sales rise. The demand for supplementary higher powered high fidelity autosound equipment should continue at the 1982 level. The market for hi-fi audio equipment, loud speakers and accessory equipment is expected to continue at or slightly above 1982 levels.

Factory shipments by the home entertainment segment of the U.S. consumer electronics industry in constant dollars are expected to increase at a compound annual rate of 4.9% between 1983 and 1987, according to the U.S. Bureau of Industrial Economics. Continued growth is expected primarily because of the increasing development and use of new video and audio products, systems and services for home entertainment and for information.

According to findings in the 1981 annual survey of manufactures (released in April 1983 by the U.S. Bureau of the Census), the value of U.S. manufacturers' shipments of radio and TV sets and related equipment amounted to $5,634.5 million, showing a slight gain over the 1980 total. Shipments of records, record blanks and prerecorded tapes were up 4.5%, reaching $1,463.5 million in 1981.

Value of Shipments by All U.S. Producers of Specified Consumer Electronics, 1980, 1981

	Millions of $		% Change
	1981	1980	1981/1980
Radio & TV receiving sets	$5,634.5	$5,608.6	+ 0.5%
Radios: Home, portable & automotive	745.3	761.1	+ 2.1
Television receivers	3,499.2	3,332.6	+ 5.0
High Fidelity components	425.7	569.3	- 25.2
Speakers, inc. loudspeaker systems	800.2	804.0	- 0.5
Radio & TV receiving sets, n.s.k.	164.0	141.6	+ 15.8
Records, record blanks & prerecorded tapes	1,463.5	1,400.4	+ 4.5

Source: U.S. Bureau of the Census, Annual Survey of Manufactures, 1980, 1981

In addition to information on value of shipments compiled in the annual surveys of manufactures, data in greater detail by product is compiled by the U.S. Bureau of the Census through sample surveys conducted among U.S. manufacturers of home-type radio receivers, television sets, phonographs, hi-fi components and speakers, results of which are published in the Current Industrial Reports series.

As noted previously, industry analysts look to color television receivers to provide the biggest area for growth in 1983. The number of receivers shipped is expected to rise from 10 million in 1982 to 10.5 million in 1983. The latest detailed figures, from the Current Industrial Series, for the year 1981 show total shipments of TV receivers of all types were valued at close to $3.4 billion, which was 2.5% above the 1980 total.

Quantity & Value of Shipments of Specified Consumer Electronics, 1981, 1980
(Quantity in thousands of units; Value in thousands of dollars)

	Quantity			Value		
	1981	1980	% Change 1981/80	1981	1980	% Change 1981/80
Home portable & automobile radios & radio-phonograph-tape recorder combinations, total	7,661.1	7,672.2	- 0.1%	$765,623	$707,979	+ 8.1%
Home radio receivers, exc. hi-fi receivers, radio phonograph combos., & TV receivers	120.8	205.5	- 41.2	6,537	10,798	- 39.5
Radio-phonograph-tape recorder combos.	834.1	1,050.0	- 20.6	118,922	151,529	- 21.5
Table & portable	647.6	802.2	- 19.3	84,001	106,701	- 21.3
Monaural / Stereo & quadraphonic	647.6	802.2	- 19.3	84,001	106,701	- 21.3
Console model	186.5	247.8	- 24.7	34,921	44,828	- 22.1
Automobile radios	6,706.2	6,416.7	+ 4.5	640,164	545,652	+ 17.3
AM-FM	613.7	916.6	- 33.0	44,900	59,316	- 24.3
AM-FM with tape player	1,966.6	1,637.4	+ 20.1	327,456	253,377	+ 29.2
Household television receivers, including television combinations	10,358.7	10,319.7	+ 0.4	3,378,809	3,297,274	+ 2.5
Table & portable models	7,846.0	7,841.8	+ 0.1	2,166,358	2,107,854	+ 2.8
Monochrome over 10 in. through 17 in. / Monochrome, over 17 in. / Color 10 in. or less / Color, over 10 in. through 17 in.	2,226.1	2,427.9	- 8.3	430,175	497,704	- 13.6
Color, over 17 in.	5,619.9	5,413.9	+ 3.8	1,736,183	1,610,150	+ 7.8
Console & consolette models	2,471.9	2,434.2	+ 1.5	1,191,144	1,166,576	+ 2.1
TV, radio, phonograph & tape recorder combination models	40.7	43.7	- 6.9	20,307	22,844	- 11.1
Recorders, phonographs, hi-fi components & radio & television chassis	19,196.2	20,624.2	- 6.9	543,641	513,908	+ 5.8
Phonographs						
Portable, table & console	1,184.0	1,425.1	- 16.9	39,724	48,469	- 18.0
Stereo compact systems	898.7	1,029.7	- 12.7	100,675	106,765	- 5.7
Consumer hi-fi components	15,729.2	16,991.2	- 7.4	208,557	220,937	- 5.6
Stereophonic receivers	276.1	281.6	- 2.0	49,570	51,920	- 4.5
Tuners (AM-FM & FM)	12.8	18.5	- 30.8	2,604	3,620	- 28.1
Preamplifier control units	25.2	33.2	- 24.1	11,148	13,424	- 17.0
Power amplifiers	96.6	84.0	+ 15.0	33,244	31,360	+ 6.0
Monophonic	13.5	10.2	+ 32.4	3,439	3,021	+ 13.8
Stereophonic	83.1	72.8	+ 14.1	29,805	28,339	+ 5.2
Turntables (record players)	385.9	296.0	+ 30.4	25,000	19,363	+ 29.1
Phonograph arms (sold separately)	140.8	416.5	- 66.2	1,243	1,898	- 34.5
Phonograph cartridges & pickups	3,311.3	4,509.4	- 26.6	35,194	43,412	- 18.9
Phonograph needles & styli	10,325.1	10,180.8	+ 1.4	30,290	32,669	- 7.3

(continued)

Quantity & Value of Shipments of Specified Consumer Electronics, 1981, 1980
(Quantity in thousands of units; Value in thousands of dollars)
(continued)

	Quantity			Value		
	1981	1980	% Change 1981/80	1981	1980	% Change 1981/80
Consumer audio/video recorders, exc. radio-phonograph-TV-recorder combos., office recording machines, & recorder mechanisms, incl. all other home-type electronic equip. sold separately	1,294.3	1,053.2	+ 22.9%	$176,334	$ 95,401	+ 84.8%
Audio tape recorders & players	90.8	174.6	- 48.0	13,963	25,102	- 44.4
Video recorders & players, complete	nr	nr	--	nr	nr	--
Other home-type electronic equip.	919.5	776.4	+ 18.4	96,680	47,237	+104.6
Speaker systems, microphones, home-type electronic kits & commercial sound equip., incl. public address systems	48,753.0	44,800.1	+ 8.8	816,552	792,773	+ 3.0
Loudspeaker systems, one or more speakers in a single enclosure	4,446.6	4,667.3	- 4.7	305,405	368,589	- 17.1
Floor standing	2,007.9	1,931.1	+ 4.0	160,621	179,202	- 10.4
Bookshelf	2,113.2	2,269.6	- 6.9	120,873	141,575	- 14.6
Other loudspeaker systems	325.5	466.5	- 30.2	23,911	47,812	- 50.0
Loudspeakers sold separately, incl. radio, television & auto. radio speakers	40,591.8	36,622.6	+ 10.8	324,619	270,416	+ 20.0
Microphones	2,122.2	2,235.3	- 5.1	49,550	46,931	+ 5.6
Home entertainment equipment kits, incl. amplifiers, audio preamplifiers, audio tuners & other, n.e.c. / Music distribution systems (FM multi-plex subscriber service)	694.1	493.1	+ 40.7	39,422	23,129	+ 70.4
Public address systems	898.2	781.7	+ 14.9	97,556	83,708	+ 16.5

n.e.c. = not elsewhere classified. nr = not reported.

Source: U.S. Bureau of the Census, Current Industrial Reports, Radio and Television Receivers, Phonographs and Related Equipment MA-36M(80)-1.

Manufacturers' shipments of recording products (both records and tapes), fell off slightly overall in 1982 according to the Recording Industry Association of America. The gains recorded by shipments of cassette type tape, 44.5% on a dollar basis, were not enough to offset the decline registered by all other segments of the industry.

Overall, shipments of records and tapes in 1982 were valued at $3.6 million at the manufacturers level.

Shipments of Phonograph Records & Prerecorded Tapes, 1981, 1982
(Quantity in Millions of Units; Value in Thousands of Dollars)

	Quantity			Value		
	1982	1981	% Change 1982/1981	1982	1981	% Change 1982/1981
Total, all reported categories	575.6	594.0	- 3.1%	$3,592.0	$3,626.0	- 0.9%
Discs, total	378.7	420.0	- 9.8	2,177.0	2,359.0	- 7.7
Singles	137.2	147.0	- 6.7	283.0	246.0	+15.1
Disc albums	241.5	273.0	- 11.5	1,894.0	2,113.0	-10.4
Tapes, total	196.9	174.0	+ 13.2	1,415.0	1,267.0	-11.7
8-track	13.7	50.0	- 72.6	36.0	313.0	-88.5
Cassettes	183.2	124.0	+ 47.7	1,379.0	954.0	+44.5

Source: Recording Industry Association of America

According to the Electronics Industry Association (HFD - Retailing Home Furnishings, 6/13/83) the fastest growing category of home entertainment equipment over the first 21 weeks of 1983, was the home video cassette recorder group, whose shipments to dealers more than doubled during the period to 1.2 million units from the same period in 1982. The only measured category to register a decline in its shipments to dealers over the same period was the monochrome TV group where shipments were off 7.8%.

Video cameras registered the greatest amount of growth for the full year 1982 vs. 1981 according to the EIA. This group garnered an increase of 56% in unit shipments while the second largest increase was for video cassette recorders, up 49.5%.

Manufacturers' Sales to Dealers of Selected Home Entertainment Equipment*
(Thousands of Units)

	Jan. 2, 1983 - May 27, 1983			Annual totals		
	1983	1982	% Change 1983/1982	1982	1981	% Change 1982/1981
Television, total	6,762.4	6,318.4	+ 7.0%	17,131.5	16,698.2	+ 2.6%
Monochrome	1,983.6	2,151.0	- 7.8	5,765.2	5,540.9	+ 4.0
Color	4,778.8	4,167.4	+ 14.7	11,366.3	11,157.3	+ 1.9
Home video cassette recorders	1,230.0	600.2	+104.9	2,034.8	1,361.0	+49.5
Video cameras	122.9	104.8	+ 17.3	295.9	189.8	+56.0
Projection TV	47.7	31.1	+ 53.4	117.3	121.7	- 3.6

* These figures from the marketing services department of the Electronic Industries Association reflect total market statistics for products in the United States regardless of country of origin.

Source: HFD - Retailing Home Furnishings

SHIPMENTS

The following table shows the 1982 distribution of shipments by month of specified types of Home Entertainment equipment as reported by the Electronics Industry Association in HFD - Retailing Home Furnishings.

Manufacturers Shipments of Selected Consumer Electronics by Month, 1982

	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Televisions, total	100.0%	6.9	7.4	8.9	7.0	6.7	9.1	7.2	7.2	10.6	9.4	9.0	10.7
Color	100.0%	7.1	7.2	8.9	7.1	6.3	9.3	7.3	7.1	10.8	9.5	9.3	10.2
Monochrome	100.0%	6.7	7.9	8.8	6.6	7.4	8.7	7.0	7.3	10.1	9.1	8.5	11.8
VCR's	100.0%	5.4	6.0	6.9	5.7	5.4	5.4	7.0	6.7	11.9	11.8	11.4	16.3
Video cameras	100.0%	6.3	6.4	7.5	6.5	8.8	8.1	8.8	6.3	9.1	9.7	8.0	14.6
Projection TV	100.0%	6.1	5.5	5.4	5.3	5.3	4.3	6.6	8.4	13.6	14.0	12.4	13.3

Source: HFD-Retailing Home Furnishings,
(Raw data: Electronics Industry Association)

Video Disc Players

According to Frost & Sullivan, a private market research firm, shipments of video disc players are expected to jump to 600,000 units in 1983, three times the level recorded in 1981. In terms of dollar value of shipments, video disc player shipments are expected to reach $405 million by 1983 while shipments of video discs are estimated to be at $130 million in that same year.

Video Disc Player Shipments, 1981 - 1983

	Quantity (Thous. of units)			% Change	Value (Millions of $)			% Change
	1983(p)	1982	1981	1983/81	1983(p)	1982	1981	1983/81
Video disc players	600	350	200	+200.0%	$405	$235	$157	+158.0%
Video discs	na	na	na	na	130	70	36	+261.1

na = not available
(p) = projected

Source: Frost & Sullivan,
Home Entertainment & Information Market, No. 843

The following data on apparent consumption for 1981 was compiled by the U.S. Bureau of the Census in the 1981 Current Industrial Reports Series. This represents domestic manufacturers' shipments minus exports plus imports, and most accurately indicates the supply of the covered types of consumer electronics in the U.S. in that year.

Apparent Consumption of Specified Consumer Electronics, 1980, 1981

	1981	1980	% Change 1981/1980	Imports % of Apparent Consumption 1981
	Quantity (Thousands of Units)			
Television receivers				
Monochrome	17,672.2	5,959.5	+ 5.1%	47%
Color		10,860.0		
Loudspeakers	123,329.2	111,433.4	+ 10.7	67
Microphones	5,993.0	6,701.4	- 10.6	93
Automotive radio receivers, tape players/recorders	20,296.8	18,663.0	+ 8.8	71
Radio receivers	33,376.9	29,787.2	+ 12.1	na
Radio-phonograph-tape combinations	16,435.4	na	na	96
Phonograph, record players, cartridges & styli	22,554.9	na	na	27
	Value (Millions of $)			
Television receivers				
Monochrome	$ 4,144.3	$ 410.0	+ 8.5%	24%
Color		3,408.8		
Loudspeakers	835.6	788.6	+ 6.0	36
Microphones	56.6	48.9	+ 15.7	48
Automotive radio receivers, tape players/recorders	1,324.8	1,092.7	+ 21.2	56
Radio receivers	665.2	601.3	+ 10.6	93
Radio-phonograph-tape combinations	1,077.9	826.5	+ 30.4	91
Phonograph, record players, cartridges & styli	448.8	459.6	- 2.3	54

na = not available

Source: U.S. Bureau of the Census,
Current Industrial Reports,
Radio & Television Receivers, Phonographs & Related Equipment, MA-36M(81)-1.

PRODUCER PRICES

Although producer (factory) prices of all items performed extremely well in 1982, showing a rise of only 2% from the previous year, home electronic equipment did even better by registering a decline of 1.2% during this same period. The largest decline was registered by the home radio group (-5.6%).

By April 1983, producer prices of consumer electronics were down 1.1% from April 1982 with the largest decline in the twelve month period coming in the 10" - 17" color TV group (-7.6%)

<u>Producer Price Indexes for Consumer Electronics--1981, 1982, April 1982, 1983</u>
(6/80 = 100, unless otherwise noted)

	April Averages			Annual Averages		
	1983	1982	1983/82	1982	1981	1982/81
All items (1967 = 100)	300.8	298.0	+ 0.9%	299.3	293.4	+ 2.0%
Home electronic equipment (1967 = 100)	86.9	87.9	- 1.1	88.1	89.2	- 1.2
Radio receivers (1967 = 100)	90.3	90.9	- 0.7	91.0	92.3	- 1.4
Home radios	91.6	93.1	- 1.6	92.3	97.8	- 5.6
Radio combos., portable & table	na	na	na	82.5	95.4	-13.5
Car radios	84.4	84.3	+ 0.1	84.3	82.9	+ 1.7
Television receivers (1967 = 100)	84.1	85.8	- 2.0	86.1	88.3	- 2.5
B & W TV, table or portable	91.1	88.6	+ 2.8	89.0	87.6	+ 1.6
Color TV receivers	94.0	95.3	- 1.4	95.5	98.3	- 2.8
Color console TV receivers (1967 = 100)	81.3	81.5	- 0.2	82.4	84.1	- 2.0
Color TV, over 10" - 17"	83.9	90.8	- 7.6	90.5	93.9	- 3.6
Color TV, over 17"	93.7	95.1	- 1.5	93.9	97.5	- 3.7
Other home electronic equip.	98.3	96.8	+ 1.5	96.9	92.9	+ 4.3
Phonographs	112.5	107.7	+ 4.5	107.4	101.2	+ 6.1
Tape recorders & players	110.3	110.3	--	109.7	102.7	+ 6.8
Audio tape recorders	82.2	82.2	--	81.8	77.3	+ 5.8
Speakers (incl. systems)	111.2	110.4	+ 0.7	110.6	107.4	+ 3.0
Bookshelf speakers	99.9	104.4	- 4.3	104.3	104.9	- 0.6
Floor standing speakers	122.1	116.8	+ 4.5	118.8	113.3	+ 4.8
Speakers sold separately	110.5	110.2	+ 0.3	110.3	105.5	+ 4.5

Source: Bureau of Labor Statistics

FOREIGN TRADE

Imports

According to the Bureau of Industrial Economics, <u>1983 Industrial Outlook</u>, imports of consumer electronics have grown at a compound annual rate of 12.9% in current dollars over the last 10 years. This same source indicates that nearly 85% of all consumer electronics imports to the U.S. come from far eastern countries.

A significant amount of consumer electronics imports enter the U.S. in an unassembled format. These products are then assembled in plants either in the U.S. or Mexico and are then sold. The U.S. Department of Commerce puts imports of this kind from Mexico at $350 million in 1982. This figure is expected by many analysts to grow significantly as the lower labor costs make this much more profitable for foreign producers.

Imports

The U.S. Department of Commerce reports that in 1982 imports of reported categories of consumer electronics fell 4.7% in 1982 to $6.8 billion. The largest category, miscellaneous home entertainment equipment, was responsible for over one-third of these imports in that year. Only two categories of electronic equipment reported gains in imports in 1982 over 1981, the telephone equipment group and the audio/video cassette recorder group, up 13.3% and 17.3% respectively.

Industry analysts expect imports to jump dramatically in 1983 as the U.S. economy recovers and consumers begin to make long delayed purchases of personal electronic equipment. The U.S. Bureau of Industrial Economics estimates that imports of consumer electronics will rise to about $7.7 billion in 1983 with imports of color televisions accounting for approximately $620 million of the imports.

U.S. Imports of Specified Consumer Electronics Products, 1981, 1982

	Quantity (Thous. of Units)		% Change	Value C.I.F.* (Mil. of $)		% Change
	1982	1981	1982/1981	1982	1981	1982/1981
Reported total	na	na	na	$6,863.3	$7,199.7	- 4.7%
Reported total, specified products	--	--	--	6,588.4	6,875.2	- 4.2
Television receivers, total	6,829.9	na	na	1,462.3	1,565.0	- 6.6
Unassembled & incomplete subassemblies	34.8	na	na	666.1	735.2	- 9.4
Monochrome, fully assembled	4,762.1	5,465.6	- 12.9%	289.3	348.3	- 16.9
Color, fully assembled	2,033.1	1,877.2	+ 8.3	506.9	481.5	+ 5.3
Radios & radio combinations, total	60,060.6	61,534.8	- 2.4	1,997.7	2,124.7	- 6.0
Radio-TV-phonograph combos.	0.2	--	na	--	--	--
AM/AM-FM automobile radios	3,643.7	3,580.5	+ 1.8	171.8	147.7	+ 16.3
AM/AM-FM radios with clocks or timers	8,375.2	9,939.8	- 15.7	118.7	115.4	+ 2.9
AM/AM-FM radios without clocks or timers	2,798.9	3,145.2	- 11.0	195.7	240.3	- 18.6
AM/AM-FM radios, nspf	22,362.0	20,941.0	+ 6.8	249.4	221.7	+ 12.5
Radio-tape recorder combos.	10,587.6	11,487.4	- 7.8	562.4	632.8	- 11.1
Radio-tape player combinations	10,448.0	10,452.0	--	541.9	585.8	- 7.5
Radio-phonograph-tape recorder combinations	1,498.2	1,729.3	- 13.4	128.8	167.5	- 23.1
Radio-phonograph-tape player combinations	302.4	199.5	+ 51.6	27.5	11.5	+139.1
Radio-phonograph combinations	44.3	60.1	- 26.3	1.5	2.0	- 25.0
Miscellaneous home entertainment equipment, total	na	na	na	2,382.5	2,531.7	- 5.9
Record players, phonographs, record changers & turntables	3,780.1	6,161.3	- 38.6	152.0	215.5	- 29.5

(continued)

Imports

U.S. Imports of Specified Consumer Electronics Products, 1981, 1982
(continued)

	Quantity (Thous. of Units) 1982	Quantity (Thous. of Units) 1981	% Change 1982/1981	Value C.I.F.* (Mil. of $) 1982	Value C.I.F.* (Mil. of $) 1981	% Change 1982/1981
Video tape players	75.8	116.4	- 34.9	$ 35.1	$ 50.5	- 30.5%
Video tape recorders, total	2,494.3	2,020.6	+ 23.4	1,072.6	1,034.4	+ 3.7
Color	2,491.6	2,010.2	+ 23.9	1,069.6	1,027.8	+ 4.1
All others	2.7	10.4	- 74.0	3.0	6.6	- 54.5
Audio tape players	6,353.1	4,668.9	+ 36.1	192.4	168.0	+ 14.5
Tape recorders, exc. office type	9,927.9	11,339.7	- 12.5	456.1	529.2	- 13.8
Tape recorder & tape player combos., exc. radio & TV receivers	na	na	na	74.4	41.8	+ 78.0
Loud speakers	69,536.4	83,744.3	- 17.0	248.1	285.9	- 13.2
Audio frequency elec. amplifiers	5,615.6	4,933.1	+ 13.8	151.8	156.1	- 2.8
Headphones, earphones & combos. of electric sound amplifier sets	na	na	na	46.6	50.3	- 7.4
Audio/video cassettes & records, total	na	na	na	390.0	332.6	+ 17.3
Magnetic audio recording cassettes, not recorded	221,950.9	187,935.3	+ 18.1	107.1	98.8	+ 8.4
Magnetic audio recording cartridges, not recorded	757.9	1,765.7	- 57.1	0.8	1.4	- 42.9
Magnetic audio recording media, exc. cassettes & cartridges, nspf, not recorded	na	na	na	35.8	32.0	+ 11.9
Magnetic video recording cassettes, not recorded	19,198.0	17,670.5	+ 8.6	132.8	120.2	+ 10.5
Magnetic video recording cartridges, not recorded	40.4	33.3	+ 21.3	0.4	0.2	+100.0
Magnetic video recording media, exc. cassettes & cartridges, nspf, not recorded	na	na	na	58.9	27.8	+111.9
Phonograph records, stereophonic or quadraphonic, 33 1/3 rpm	19,716.1	16,000.3	+ 23.2	45.7	38.5	+ 18.7
Phonograph records, nspf	4,400.0	7,279.2	- 39.6	8.5	13.7	- 38.0
Home protection, total	6,323.6	6,618.5	- 4.5	48.1	49.5	- 2.8
Smoke detectors	3,683.5	4,290.5	- 14.1	24.4	28.9	- 15.4
Burglar & fire alarms	2,640.1	2,328.0	+ 13.4	23.7	20.6	+ 15.1

(continued)

Imports

U.S. Imports of Specified Consumer Electronics Products, 1981, 1982
(continued)

	Quantity (Thous. of Units) 1982	Quantity (Thous. of Units) 1981	% Change 1982/1981	Value C.I.F.* (Mil. of $) 1982	Value C.I.F.* (Mil. of $) 1981	% Change 1982/1981
Telephone equipment, total	na	na	na	$307.8	$271.7	+ 13.3%
Telephone instruments	5,471.1	2,715.2	+101.5%	142.8	138.0	+ 3.5
Telephone apparatus & parts thereof, nspf	na	na	na	165.0	133.7	+ 23.4

na = not available
nspf = not specially provided for

* The C.I.F. value is based upon the purchase price and includes all freight, insurance, and other charges (excluding U.S. import duties) incurred in bringing the merchandise from the country of exportation and generally placing it alongside the carrier at the first port of entry in the U.S.

Source: U.S. Bureau of the Census,
U.S. General Imports,
FT 135, December 1981, 1982

Exports

The Bureau of Industrial Economics reports that in the period 1972 - 1981, U.S. exports of consumer electronics have grown at a compound annual rate of 18.3%. However, in 1982, they declined 22% from the previous years level primarily due to the worldwide recession and price competition and product innovation from Far East manufacturers.

The largest drop in exports between 1981 and 1982 was registered by the television receiver segment of the personal electronics industry. The value of TV sets exported by the United States fell by nearly half in 1982 to $220 million. Despite the huge decline in the value of its exports on a unit basis, TVs remained the largest category of exports reported on. Only two categories of electronic equipment registered gains in 1982 vs. 1981, home protection equipment and magnetic recording media, up 7.5% and 3.0% respectively.

Analysts site competition from the Far East when predicting that exports of consumer electronic products will be held at 9.8% in 1983. However, expanding technology is expected to boost exports significantly over the next several years as other consuming countries slowly climb out of the recession which has gripped the world economy since 1981.

Exports

U.S. Exports of Specified Consumer Electronics Products, 1981, 1982

	Quantity (Thous. of Units) 1982	1981	% Change 1982/1981	Value F.A.S.* (Mil. of $) 1982	1981	% Change 1982/1981
Reported total, specified products	--	--	--	$ 1,029.9	$1,335.2	- 22.9%
Television receivers, total	2,361.3	4,186.8	- 43.6%	220.5	389.8	- 43.4
Unfinished or unassembled	1,841.2	3,280.5	- 43.9	64.6	123.8	- 47.8
Monochrome, fully assembled	137.9	260.4	- 47.0	16.6	29.7	- 44.1
Color, fully assembled	382.2	646.4	- 40.9	139.3	236.3	- 41.0
Radios & radio combinations, total	1,261.5	1,439.1	- 12.3	108.4	121.6	- 10.9
Radio-TV-phonograph combos.	8.2	9.5	- 13.7	3.5	4.4	- 20.5
AM/AM-FM automobile radios	758.5	774.7	- 2.1	71.6	72.6	- 1.4
AM/AM-FM radios, except automobile	412.7	559.6	- 26.3	11.7	19.0	- 38.4
Radio-phono-tape recorder combos., exc. with TV	82.1	95.3	- 13.9	21.6	25.6	- 15.6
Miscellaneous home entertainment equipment, total	na	na	na	236.4	276.3	- 14.4
Record players, phonographs, record changers & turntables	64.0	99.2	- 35.5	16.9	26.4	- 36.0
Video tape players	1.8	3.5	- 48.6	7.1	5.8	+ 22.4
Video tape recorders, total	19.7	13.2	+ 49.2	77.5	85.2	- 9.0
Color	14.1	9.5	+ 48.4	66.8	76.1	- 12.2
All others	5.6	3.7	+ 51.4	10.7	9.1	+ 17.6
Audio tape players	109.1	149.8	- 27.2	18.2	18.4	- 1.1
Headphones, earphones & combos. of sound amplifiers sets	na	na	na	23.8	26.0	- 8.5
Loudspeakers	4,269.9	4,923.0	- 13.3	191.9	114.5	+ 67.6
Audio/video cassettes & records, total	na	na	na	444.7	431.8	+ 3.0
Magnetic audio tape, not recorded	70,711.4	157,785.1	- 55.2	62.5	87.4	- 28.5
Magnetic viedo tape, not recorded	6,842.7	2,654.5	+157.8	246.0	163.7	+ 50.3
Magnetic recording media, nspf	--	--	na	51.3	64.0	- 19.8
Magnetic video tape recordings	32,939.3	31,423.6	+ 4.8	26.7	28.9	- 7.6
Phonograph records, stereo, or quadrophonic, 33 1/3 rpm	10,780.7	17,093.6	- 36.9	32.3	50.9	- 36.5
Phonograph records, nspf	8,426.7	11,876.6	- 29.0	25.9	36.9	- 29.8

(continued)

FOREIGN TRADE

Exports

U.S. Exports of Selected Consumer Electronics Products, 1981, 1982
(continued)

	Quantity (Thous. of Units) 1982	1981	% Change 1982/1981	Value F.A.S.* (Mil. $) 1982	1981	% Change 1981/1981
Home protection, total	na	na	na	$95.6	$88.9	+ 7.5%
Burglar alarms	160.7	186.7	- 13.9%	32.8	31.6	+ 3.8
Smoke detectors	572.9	693.7	- 17.4	14.2	15.3	- 7.2
Fire alarms, exc. smoke detectors	--	--	na	48.6	42.0	+ 15.7
Telephone instruments	305.6	406.0	- 24.7	24.3	26.8	- 9.3

nspf = not specially provided for.
na = not available

*F.A.S. value is the value at the U.S. port of export, based on the transaction price including inland freight, insurance, and other charges incurred in placing the merchandise alongside the carrier at the U.S. port of exportation. The value, as defined, excludes the cost of loading the merchandise aboard the exporting carrier and also excludes freight, insurance, and any other charges or transportation costs beyond the port of exportation.

Source: U.S. Bureau of the Census, U.S. General Exports FT 410, December 1981 and 1982.

THE SIZE OF THE POTENTIAL MARKET

The Female Population of the U.S., 1983 & Projections to 2000*

	Number (Thous.) 1983	1990	2000	% Change 2000/1983	Percent Distribution 1983	1990	2000
FEMALE							
Total, all ages	120,216	128,234	137,611	+ 14.5%	100.0%	100.0%	100.0%
Under 16 years	26,923	28,240	29,175	+ 8.4	22.4	22.0	21.2
16 years & over	93,293	99,994	108,436	+ 16.2	77.6	78.0	78.8
16 - 19	7,654	6,704	7,373	- 3.7	6.4	5.2	5.4
20 - 34	30,925	30,774	26,442	- 14.5	25.7	24.0	19.2
35 - 54	26,458	32,170	40,810	+ 54.2	22.0	25.1	29.6
55 & over	28,256	30,346	33,811	+ 19.7	23.5	23.7	24.6
Median age (years)	32.2	34.3	37.7	+ 17.1			

(continued)

THE SIZE OF THE POTENTIAL MARKET

The Male Population of the U.S., 1983 & Projections to 2000*

	Number (Thous.)			% Change	Percent Distribution		
	1983	1990	2000	2000/1983	1983	1990	2000
MALE							
Total, all ages	113,977	121,498	130,379	+ 14.4%	100.0%	100.0%	100.0%
Under 16 years	28,180	29,591	30,592	+ 8.6	24.7	24.4	23.5
16 years & over	85,797	91,907	99,787	+ 16.3	75.3	75.6	76.5
16 - 19	7,958	6,999	7,709	- 3.1	7.0	5.8	5.9
20 - 34	31,162	31,301	27,071	- 13.1	27.3	25.8	20.8
35 - 54	25,302	31,066	40,002	+ 58.1	22.2	25.5	30.7
55 & over	21,376	22,541	25,005	+ 17.0	18.8	18.5	19.1
Median age (years)	29.6	31.8	34.9	+ 17.9			

Total Population of the U.S., 1983 & Projections to 2000*

	Number (Thous.)			% Change	Percent Distribution		
	1983	1990	2000	2000/1983	1983	1990	2000
TOTAL, MALE & FEMALE							
Total, all ages	234,193	249,731	267,990	+ 14.4%	100.0%	100.0%	100.0%
Under 16 years	55,103	57,830	59,768	+ 8.5	23.5	23.2	22.3
16 years & over	179,090	191,901	208,222	+ 16.3	76.5	76.8	77.7
16 - 19	15,612	13,703	15,083	- 3.4	6.7	5.5	5.6
20 - 34	62,087	62,073	53,513	- 13.8	26.5	24.8	20.0
35 - 54	51,759	63,236	80,812	+ 56.1	22.1	25.3	30.2
55 & over	49,632	52,889	58,814	+ 18.5	21.2	21.2	21.9
Median age (years)	30.9	33.0	36.3	+ 17.5			

*Middle series (out of 3) projections based on varying assumptions on fertility, mortality and emigration.

Source: U.S. Bureau of the Census,
Series P-25, No. 922
(October 1982)

While some consumer electronics products, such as TVs and radios, have already reached saturation levels in U.S. households and depend mainly on replacement sales for growth, many other products have barely entered the home market. For example, only an estimated 5% of households own either a video cassette recorder or a telephone. According to an EIA survey, 31% of U.S. households own component stereo systems. Thus, there is room for significant growth for these products among the more than 84 million households in the U.S. currently.

Of the 83.5 million households in the U.S. in 1981, almost a quarter (23.1%) were headed by someone between the ages of 25 and 34 and 18.3% had a household head aged 35-44 years old. In 1981, 27.6% of all households contained at least four persons.

Number & Median Income of U.S. Households
By Age of Householder & Size of Household, 1981, 1981

	Number of Households (Thous. Units)		% Change	Median Income		% Change
	1981	1980	1981/1980	1981	1980	1981/1980
Total	83,527	82,368	+ 1.4%	$19,074	$17,710	+ 7.7%
Age of Householder						
15-24 years	6,110	6,443	- 5.2	13,242	12,711	+ 4.2
25-34 years	19,327	19,153	+ 0.9	20,513	19,337	+ 6.1
35-44 years	15,326	14,462	+ 6.0	25,384	23,627	+ 7.4
45-54 years	12,505	12,694	- 1.5	27,044	25,121	+ 7.7
55-64 years	12,947	12,704	+ 1.9	21,041	19,547	+ 7.6
65 years & older	17,312	16,912	+ 2.4	9,903	8,781	+ 12.8
Size of Household						
1 person	19,354	18,936	+ 2.2	9,192	8,162	+ 12.6
2 person	26,486	25,787	+ 2.7	18,909	17,506	+ 8.0
3 person	14,617	14,569	+ 0.3	23,601	21,737	+ 8.6
4 person	12,868	12,768	+ 0.8	26,324	24,410	+ 7.8
5 person	6,103	6,117	- 0.2	26,131	24,857	+ 5.1
6 person	2,480	2,549	- 2.7	26,945	24,415	+ 10.4
7 or more persons	1,619	1,643	- 1.5	24,558	23,332	+ 5.3

Source: U.S. Bureau of the Census,
Current Population Reports,
Money Income of Households, Families & Persons in the U.S.: 1981, March 1983

RETAIL SALES BY PRODUCT

The consumer electronics market encompasses a great variety of products, including computers and calculators, home entertainment systems, home security systems and products, communications products and more. In total, industry analysts place the value at retail of this market at about $17 billion in 1982.

Retail sales figures on specific products that make up this fast-growing market are not available in government sources, but must be gleaned from a variety of trade sources.

The trade publication Discount Merchandiser reports the following breakdown on retail sales of consumer electronics, reported by this source at about $13.5 billion in 1981.

Distribution of Retail Sales of Consumer Electronics, 1981
By Type of Outlet

Type of Store	1981 Volume (Thous. $)	% of Sales in Own Stores	% to Total
TV, radio stores	6,575,000	85.7%	48.8%
Household appliance stores	1,260,000	18.9	9.4
Discount stores	1,242,000	2.6	9.2
Department stores	1,062,000	2.4	7.9
Misc. general merchandise stores	826,000	6.1	6.1
Catalog showrooms	721,000	9.4	5.4
Furniture stores	672,000	3.6	5.0
Auto & home supply stores	511,000	2.6	3.8
Drug stores	266,000	0.8	2.0
Mail order	186,000	3.7	1.4
Home centers	153,000	1.9	1.0
Total	$13,474,000		100.0%

Source: Discount Merchandise (May 1982)

Television Receivers

After a decade-long struggle in a seemingly mature marketplace, where 98% of all households owned at least one television set, sales of TVs, especially color sets, have shown marked increases since 1980. In 1982, there were a total of 17.1 million sets sold in the U.S. with 11.4 million of these being color with the remainder coming from the black & white category. Over the first 21 weeks of 1983, television sales were up another 7.0% from their comparable 1982 figures on a unit basis.

Analysts see this recent growth coming from two primary sources. The first major cause for the increased growth rate is due to the recession prevailing since 1980. Consumers have become more conservative with their disposable income and have turned to their own homes as their main source of entertainment. At the same time, advances in technology have made it more economically feasible to bring a vast variety of entertainment and information sources into the home. Consequently, consumers are upgrading their televisions, the centerpiece of the technology, so as to more easily accommodate this increase.

Projection TV, a relatively new entrant in the field, has faired well, registering sales of 117,000 units in 1982.

Analysts believe that this climb in the television industry will continue in the future. Some industry insiders see sales of color televisions reaching 12 to 14 million units by 1983, with a more optimistic group pointing to the possibility of 15 million units in sales by that year.

RETAIL SALES BY PRODUCT

Television Receivers

Although recent surveys indicate that specialty stores control approximately one-third of the television market (relatively the same percentage as the 1977 Census of Retail Trade indicates) there has been a major shift in sales within this group due to the highly competitive nature of the television industry. Consumers are tending to buy less in traditional TV/appliance stores and are now purchasing more in specialized audio/video stores. Overall, department stores have held steady in their share of the market, consistently representing about 20% (this includes discount department store operations.)

Video Cassette Recorders

Since their introduction in 1975, the home video cassette recorder has enjoyed ready acceptance, with sales growth coming in every year. Presently, with only 5% of all U.S. households owning VCRs, industry analysts see potential growth for the $5 billion category for many years to come.

Portable VCRs are becoming extremely popular with the home-movie making market, skyrocketing this new category to nearly 40% of industry sales according to some industry analysts.

Video Disc Systems

After a much ballyhooed introduction in 1980, video disc systems are turning out to be more difficult to sell than marketers had predicted. Sources estimate that only about 350,000 video disc players and possibly 4 million video discs were sold in 1982.

Manufacturers now believe that it will take until at least 1985 for video disc systems to be readily accepted by consumers. With three mutually-incompatable systems now on the market, retailers must first overcome the great deal of confusion which presently exists within consumers' minds as to which system to purchase.

Home Protection

After undergoing a rapid period of growth in the late 1970's, the home protection industry has more recently experienced a major shake-out, where only several of the most profitable companies have remained in the industry.

It is estimated that in 1981, consumers spent more than $230 million on home security systems with nearly half of this total coming in sales of smoke detectors.

Sales of Home Security Devices, 1979-1981
(Thousands of Dollars)

	1981	1980	1979	1981/1980	1981/1979
Home security, total	$235,339	$205,242	$209,230	+ 14.7%	+ 12.5%
Smoke detectors	116,272	94,050	94,200	+ 23.6	+ 23.4
Fire extinguishers	32,970	32,900	35,000	+ 0.2	- 5.8
Intrusion systems	38,367	35,028	42,750	+ 9.5	- 10.3
Smoke/fire/intrusion systems	47,730	43,264	37,280	+ 10.3	+ 28.0

Source: Merchandising Magazine

RETAIL SALES BY PRODUCT

Telephones

At the present time 96% of all households have at least one phone representing a total of about 142 million phones.

Although owning your own telephone has been legal for years and has received heavy publicity recently, a meagre 5% of all U.S. households have exercised their option to purchase. Industry analysts report that despite the obvious savings of buying over leasing, consumers are deterred by the prospects of having to care for future repairs, as well as the thought of owning a phone without all the latest features.

The sales of home telephones reached a total of $600 million in 1982. The outlook for growth is bright. According to General Electric Co., a new entrant in the home phone market, sales will climb to over 20 million units by 1987, from the 5 million recorded in 1982.

Component Audio

The Electronics Industry Association reports that in the period 1972-1981 shipments of audio components (receivers, turntables, loudspeakers, etc.) have grown at an annual rate of 10%-20%. In 1982, analysts estimate that total retail sales of the category were somewhere in the area of $2 billion.

At the present time, retailers of stereos are undergoing a major shake-out with most survivors reporting that they are diversifying into sales of home entertainment equipment rather than relying on traditional audio for their livelihood.

It is widely believed that the audio business at the present time is highly characterized by replacement sales. A majority of sales of audio equipment, particularly component audio, are to audiophiles who are attempting to bring their present systems up to "state of the art" status.

RETAIL SALES BY STORE TYPE

Radio & Television Stores

Radio and TV stores were largely small operations in 1980, where over 80% of establishments had fewer than 10 paid employees. Operations with more than 50 workers were the rarity in 1980 according to the U.S. Census Bureau which reported that only 0.4% of all establishments fit into this category. Nearly 6 out of 10 workers in radio and TV stores work in outlets with less than 10 employees while 5.5% worked in outlets with more than 50 employees.

Radio & Television Stores by Employee Size, 1980

	Establishments		Employees		Annual Payroll	
	Number	% of total	Number	% of total	Mil. $	% of total
Radio & TV stores, total	14,349	100.0%	87,507	100.0%	$912.0	100.0%
By employment size:						
Less than 4 employees	7,745	54.0	19,693	22.5	201.5	22.1
5 to 9 employees	4,475	31.2	31,590	36.1	308.2	33.8
10 to 19 employees	1,768	12.3	22,493	25.7	238.0	26.1
20 to 49 employees	304	2.2	8,901	10.2	107.0	11.7
50 or more employees	57	0.4	4,830	5.5	57.3	6.3

Source: U.S. Bureau of the Census, County Business Patterns, 1980

Radio & Television Stores

Sales in radio and TV stores climbed only slightly between 1981 and 1982 rising only 1.6% to a total of $8.5 billion in that year.

Number of Stores & Sales of Radio & TV Stores, 1979 - 1982

	1982	1981	1980	1979	Percent Change 1982/1981	Percent Change 1982/1979
Total sales (mil. $)	$8,451	$8,317	$ 7,326	$ 6,604	+ 1.6%	+ 28.0%
No. of stores	na	na	14,349	14,999	na	na

Source: U.S. Bureau of the Census,
Revised Monthly Retail Sales BR-13-82S,
County Business Patterns, 1979, 1980

Department Stores

According to the National Retail Merchants Association, the typical department store reporting sales of radio and audio equipment and supplies indicated that sales gained 10.8% in 1981 compared with 1980. Sales of television sets rose an even larger 14.1% during the same period.

Merchandising & Operating Results in Department Stores
With Total Annual Sales Over $1 Million

	Radio & Audio Equipment & Supplies	Television Receivers
Net sales, % change from last year	+ 10.8%	+ 14.1%
Sales, % of merchandise division	14.5	34.2
Sales, % to total store sales	0.8	1.8
$ sales per square foot of selling space	$ 123.4	$ 173.2
Cumulative markon, %	31.8	23.8
Gross margin, % of sales including cash discounts	25.7	17.4
Markdowns, retail, % of sales	8.1	6.8
Returns, % of sales	11.7	10.2
Number of stock turns	2.7	3.7
Salespeople's salaries, % of sales	9.8	8.5
Sales promotions, % of sales	4.2	3.3

Source: National Retail Merchants Association
"Merchandising & Operating Results,"
1982 Edition.

RETAIL ADVERTISING

Christmas is the main time of the year in which consumers make purchases of electronics items. November and December combined account for about one third of the years' sales.

Monthly Distribution of Newspaper Ad Linage, 1981

	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Radio sets	100.0%	2.8%	4.8%	6.0%	6.1%	11.0%	8.3%	5.9%	6.8%	6.0%	7.3%	14.2%	20.8%
Stereo sets	100.0	5.0	7.2	7.3	6.1	8.2	7.5	6.4	8.2	8.0	9.1	12.4	14.6
Television	100.0	7.3	8.0	7.6	7.3	8.1	6.9	6.9	8.6	8.3	8.9	10.8	11.3

Source: Newspaper Advertising Bureau, 1983 Newspaper Advertising Planbook.

CONSUMER PRICE TRENDS

Throughout the years, the consumer electronics industry has been able to produce better quality and more sophisticated products without price increases due to a rapidly advancing technology.

Another factor which tends to keep consumer electronics prices relatively low is the tendency of the industry to seek out the lowest labor rate countries for its manufacturing needs because of the extremely competitive nature of the market. Thus, the industry's production has moved during the last twenty years from the U.S. to such low cost areas as Taiwan, Hong Kong and Mexico.

The CPI for television and sound equipment (tape recorders and radios) was stable between 1981 and 1982 at 108.5. Meanwhile the index for televisions alone actually registered a decrease during the period, declining by 1.3% to 103.9.

Consumer Price Indexes For Specified Consumer Electronics, 1980 - 1982
(December 1977=100, unless otherwise specified)

	1982	1981	1980	% Change 1982/1981	% Change 1982/1980
Appliances, incl. TV & sound equipment*	151.0	146.2	140.5	+ 3.3%	+ 7.5%
Television & sound equipment	108.5	108.5	106.2	--	+ 2.2
Television	103.9	105.3	104.4	- 1.3	- 0.5
Sound equipment	113.7	113.7	108.9	--	+ 4.4

* Base: 1967=100

Source: U.S. Bureau of Labor Statistics.

CONSUMER BUYING HABITS

In September 1982, SEVENTEEN Magazine conducted a mail survey among several of SEVENTEEN'S consumer panels, representing a cross section of the teenage market. A total of 1,505 returns were received from teenagers attending high school and college.

The purpose of the 1983 Back-to-School survey was to determine the purchasing behavior of teenage girls. Each item was measured in terms of the number of teenage girls currently in school purchasing the item, the number of items purchased and the total expenditures for the item.

Purchases of Selected Consumer Electronics Products by Teenage Students

	Number Purchasing (Add 000's)	Number Purchased (Add 000's)	Total Expenditures (Add 000's)
Pocket calculator	1,587	1,627	$ 31,889
Radio			
Clock	679	687	23,006
Portable/transistor	226	249	13,953
Table model	174	174	8,522
Compact system (Receiver AM/FM, turntable & speakers all purchased together but not in one cabinet)	421	421	126,879
Cassette recorder	675	679	51,364
Cartridge/8-track recorder	153	226	7,341
Portable television	319	334	52,573

Source: SEVENTEEN MAGAZINE Back-To-School 1983.

Video Cassette Recorders

During January and February, 1983 Merchandising Magazine conducted interviews nationwide among shoppers in major shopping districts in order to determine their ownership and attitudes towards various consumer electronics products.

Merchandising discovered that the price of VCRs weighted heavily on consumers of the product with more than 40% stating that it was their prime consideration when purchasing the product. In addition, over 37% of the respondents who did not own a video cassette recorder felt that the price was just too high for them to be able to afford one at this time.

One out of four respondents stated that they either had or would buy a VCR at a video specialty store while discount operations were the second most frequently mentioned outlet for this kind of purchase.

Video Cassette Recorders

Place /Intended Place of Purchase of VCR's

	Respondents
Total respondents	759
Percent of total:	100.0%
Video specialty stores	25.4
Discounters	18.3
Appliance/TV stores	16.2
Audio/HiFi stores	13.4
Mass merchandisers	12.0
Department stores	8.8
Catalog showroom	5.4
Other	3.4

NOTE: Adds to more than 100% due to multiple responses.

Major Factors in the Purchase of Video Cassette Recorders*

Factors	Main Factor	Second Factor	Third Factor
Price	41.8%	35.0%	20.2%
Features	38.8	37.3	21.9
Brand name	18.0	23.9	53.3
Other factors	1.4	0.3	0.9
None indicated	0.0	3.5	3.7

* Base equals 649 respondents.

Major Factors for Non-Purchase of Video Cassette Recorders

	Respondents
Total respondents	685
Percent of total:	100.0%
Not interested	55.8
Too expensive	37.1
Not familiar with product	8.6
Other reasons	2.2

NOTE: Adds to more than 100.0% due to multiple responses.

Source: Merchandising Magazine, May 1983

CONSUMER BUYING HABITS

Video Cassette Recorders

In order to measure the publics readiness to purchase specified consumer products Chain Store Age in association with Leo J. Shapiro & Associates performed the CSA Second Consumer Buying Intentions Study. A nationally projectable sample of 2,717 households supplemented by interviews with another 6,200 households in 45 metropolitan areas formed the base for the study.

The results indicate that in 1982, 1.7% of all households had purchased a VCR while another 2.5% intended to make a purchase in 1983. Specialty stores were the most commonly mentioned outlet type for these purchases.

Place of Purchase of Video Cassette Recorders
(Percent of Total Respondents)

	1982	1983*
Total respondents	100.0%	100.0%
Specialty stores	39.1	43.9
Mass merchandisers	15.4	14.8
Discounters, incl. K mart	11.7	7.7
Department stores	9.8	8.6
Catalog showrooms	4.2	5.6
Other	19.8	19.4

* Outlet type mentioned by those stating they intended to purchase a VCR in 1983.

Source: Chain Store Age,
December 1982.

Telephones

Nearly 7 out of 10 interviewed in Merchandising Magazine's Eleventh Annual Consumer Survey stated that their main reason for purchasing a telephone was in order to save money on rentals. In addition, more than 40% stated that they had bought or would buy their phone from a retailer other than the telephone company and 46.7% said they had or would install their phones themselves.

The median price of those stating a price paid or expected to pay in the Merchandising survey was $47.44.

Price Paid/Expected to Pay for a Telephone

	Respondents
Total respondents	1,580
Percent of total:	100.0%
Under $20.00	10.4
$20.00 - $39.99	30.6
$40.00 - $69.99	36.2
$70.00 - $99.99	15.5
$100.00 - $149.99	8.3
$150.00 & over	1.8
Median price	$ 47.44

Telephones

Place/Intended Place of Purchase of Telephones

	Respondents
Total respondents	1,535
Percent of total:	100.0%
Retail store other than the phone company	42.4
Phone company store	29.8
Store owned by the phone company	27.0
Received as a gift	10.6
Other	2.0

NOTE: Totals add to more than 100.0% due to multiple responses

Number of Phones Owned in Household Presently

	Respondents
Total respondents	1,927
Percent of total:	100.0%
None	61.4
One or more	38.6
One	18.2
Two	11.7
Three	5.3
Four	2.0
Five	0.9
Six or more	0.5

Reasons for Buying a Telephone

	Respondents
Total respondents	1,510
Percent of total:	100.0%
To save money	68.1
Wanted features	22.8
For style/design	19.9
Other reasons	4.5

NOTE: Totals add to more than 100.0% due to multiple responses.

Source of preceding tables: Merchandising Magazine, May, 1983.

Personal Stereos

There is probably no product which epitomizes the consumer electronics boom more than the personal stereo. Retailers report that as the price of these units has declined, their popularity has continued its long sustained growth. Chain Store Age magazine (December 1982) reports that in 1982 only 16.9% of those shopping for one of these units had no idea of what the unit should cost. Of those who cited a cost, nearly 60% stated that they expected to pay less than $100. Chain Store Age also reports that more than four out of ten potential purchasers responded that price was the reason they would choose a particular store to shop in, with 60% who did buy, doing so in general merchandise chains.

The bulk of the demand for personal stereos is in the East and West where Chain Store Age reports that more than half of all unit sales took place in 1982.

Region of Purchase of Personal Stereos, 1982

	Percent of Purchasers
Total purchasers	100.0%
Region of purchaser:	
New England	7.8
Middle Atlantic	24.4
East North Central	17.9
West North Central	3.3
South Atlantic	7.4
East South Central	5.4
West North Central	4.8
Mountain	12.3
Pacific	16.7

Source: Chain Store Age/ Leo Shapiro & Associates, December 1982.

FAIRCHILD FACT FILES AVAILABLE FOR 1983

COATS, SUITS, RAINWEAR, AND FURS (WOMEN'S, MISSES' AND JUNIORS'): Details number of manufacturers by employment size, cuttings, and value of shipments. Also covered at the industry level are price trends and imports/exports. At the retailer level, data is presented on estimates of retail volume, merchandising and operating results, and seasonal patterns in advertising. Also focuses on consumer buying habits and plans.

CONSUMER MARKET DEVELOPMENTS: Provides a detailed view of consumers in the U.S., including population by age, personal income, the labor force, employment and earnings, households and living arrangements. Also covers trends in consumer prices, in personal consumption expenditures by product classification and in retail sales by store types, and the outlook for consumer markets based on current economic trends. (1982 Edition available now -- 1983 Edition will be available in January, 1984)

DEPARTMENT STORE SALES: Covers sales of department stores, and the number of stores operated, listed by geographic region and state based on buying headquarter location. Also lists branch store sales, where available. Sales information on major general merchandise/apparel retail chains, which are listed alphabetically, and a list of department stores with sales of $50 million or more, are included. (1982 Edition available now -- 1983 Edition will be available in December, 1983)

DRESSES (WOMEN'S, MISSES' AND JUNIORS'): Statistics on the dress industry, including trends in the number of manufacturers, and in production and shipments. Also data on fabric types and manufacturers' price lines and shipments by region of the country. Includes estimates on retail sales and data on the consumer market in terms of important demographic data.

FASHION ACCESSORIES (MEN'S AND WOMEN'S): Information on a wide range of fashion accessories for men and women, including jewelry, watches, gloves, belts, handbags, small leather goods, luggage, neckwear, hats. Includes key information at manufacturer level, as well as available retailer and consumer data. Also covers important fashion developments.

FOOTWEAR (MEN'S, WOMEN'S AND CHILDREN'S): A statistical summary of the U.S. footwear industry and the footwear markets. Covers domestic production and shipments, as well as imports. Provides retail sales and merchandising statistics and findings in a comprehensive consumer survey conducted by Footwear News Magazine. ($15.00) (1982 Edition available now -- 1983 Edition will be available in July, 1983)

HOME TEXTILES: Information on the industry includes the latest data on number of manufacturers, production and shipments for a wide range of products, including bed linens, towels, blankets and comforters, slip covers, pillows, curtains and draperies. Trends in merchandising, departmental operations and consumer patterns are also covered.

HOSIERY/LEGWEAR (MEN'S, WOMEN'S AND CHILDREN'S): A comprehensive report on these industries at the mill, retailer and consumer levels. Included are details on production and shipments, retail sales by type of outlet and on patterns in consumer spending in terms of major demographic characteristics.

HOUSEHOLD FURNITURE AND BEDDING: Contains U.S. industry-wide data on quantity and value of manufacturers' shipments of furniture and bedding (mattresses and dual-purpose sleep furniture). Also covers information on the geographic location and size of manufacturers. Retail information includes sales by store type, trends in furniture styles and materials and market demographics. Features results of a consumer survey on furniture and bedding buying habits.

INFANTS', TODDLERS', GIRLS' AND BOYS' WEAR: Manufacturer data spotlights production, value of shipments, number of manufacturers, employment in the industry by company size, price trends. At the retailer level, data focuses on sales share by type of outlet and on operating ratios in department and specialty stores. Also covers data on purchases of children's wear by price line and season.

INNER FASHIONS: NIGHTWEAR, DAYWEAR AND LOUNGEWEAR (WOMEN'S, MISSES' & JUNIORS'): Data on production and shipments, tracing market shifts in response to fashion changes. Imports are covered, retail trends and merchandising ratios, and data on consumer purchases by price point, store type and month. (September)

MAJOR APPLIANCES AND ELECTRIC HOUSEWARES: Covers a wide range of products in the major appliance and traffic appliance classifications, including heating, laundry and cooking appliances for household use, cleaning equipment, and personal care appliances. Details production and shipments, sales trends, retail merchandising results, more. (November)

MEN'S FURNISHINGS AND WORK WEAR: Includes information on number of manufacturers, production and shipment figures on shirts, underwear, nightwear, neckwear, hats, etc., size of firms, imports and exports. Also provides data at the retail level, including sales and merchandising trends, operating ratios, and sales share by type of outlet.

MEN'S SPORTSWEAR, CASUAL WEAR AND JEANS: The wide variety of men's wear items included in this broad category are covered from available information on the industry at the manufacturer, retailer and consumer level. Included is information on production and shipments, imports, exports, market trends, retail sales and consumer buying practices. Trendy data, such as developments in Western wear, designer labels, fashion jeans and active wear, are included.

MEN'S TAILORED CLOTHING/SEPARATES AND RAINWEAR: Manufacturer level profiled by production value of shipments, employment, size of firms. Imports from key foreign sources by unit and dollar value are covered. Data is also presented on retail sales, merchandising and consumer buying habits. (August)

SOFT SURFACE FLOOR COVERINGS: Trends in the number of manufacturers, on production and value of shipments of major types of soft surface floor coverings, and foreign trade, are covered in this report. Retailing information includes departmental merchandising and operating results, estimated volume by type of outlet and trends in consumer buying.

THE SPORTS/FITNESS/LEISURE MARKETS: Covers developments in the fast-growing markets for sports facilities and equipment, for footwear and apparel designed not only for serious sports participants but those who like the "look" for leisure wear, and for products involved in life styles related to interest in sports and in physical fitness. (Special Fact File for 1982, $15.00)

SPORTSWEAR, CASUAL WEAR, SEPARATES AND JEANS (WOMEN'S, MISSES' AND JUNIORS'): A statistical view of this segment of the women's wear industry is provided, including data on production and value of shipments, imports of major categories, sales by type of outlet, price points, seasonal patterns, and consumer buying habits. Also included is information on departmental merchandising and operating results, as well as important developments in retailing, such as the designer's label.

THE TEXTILE/APPAREL INDUSTRIES: Industry overview, providing statistics on fibers and fabrics as well as finished goods. Includes information on industry size, concentration of sales by mill/manufacturer size, production and shipments by U.S. mills, as well as exports and imports. Covers capital expenditures and data on mill machinery. (October)

TOILETRIES, BEAUTY AIDS, COSMETICS AND FRAGRANCES: A detailed view of the U.S. industry covering products for both the female and male markets. Includes latest available industry-wide statistics and projections, as well as data on leading manufacturers in various product categories. Consumer expenditures, buying habits and usage of various product types are highlighted, as well as data on sales by outlet type and advertising expenditures by major producers.

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